UNITED STATES OF AMERICA

NATIONAL TRANSPORTATION SAFETY BOARD

Investigation of:	
LOSS OF THE SUBMARINE *TITAN* IN THE NORTH ATLANTIC OCEAN ON JUNE 18, 2023	Accident No.: DCA23FM036

Interview of: DAN SCOVILLE, Former Employee
OceanGate

via Microsoft Teams videoconference

Tuesday,
October 17, 2023

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I N T E R V I E W

(9:36 a.m.)

LCDR [redacted] -- recorder on Teams and, sir, can you please acknowledge that this is being recorded via Teams as well as NTSB recorder?

MR. SCOVILLE: I understand it's being recorded.

LCDR [redacted] Thank you. This is a joint U.S. Coast Guard/National Transportation Safety Board investigation, and the Coast Guard is the lead agency. And we're conducting this interview under the applicable Coast Guard regulations.

Today is October 17th, 2023, at 0936, and it is an interview with Mr. Dan Scoville at 909 45th Street in New Orleans, Louisiana.

First, we're going to go around and introduce ourselves, and then we'll get into introducing you and your counsel.

My name is Lieutenant Commander [redacted] [redacted] I'm the lead investigator with the Marine Board of Investigation into the incident and events surrounding the Titan submersible marine casualty.

MR. NEUBAUER: Good morning, sir. My name is Jason Neubauer. I'm the Chair of the Coast Guard Marine Board of Investigation.

MR. [redacted] Good morning. My name is [redacted] [redacted] I'm with the Investigations NCOE. I'm one of the investigators at MBI.

MR. SCOVILLE: I'm sorry. You used a bunch of acronyms I

didn't understand. I got Coast Guard. I get that, but --

MR. [redacted] I'm at the Investigations National Center of Excellence.

LCDR [redacted] Okay. [redacted]

LCDR [redacted] Good morning. [redacted] That's spelled [redacted] I am the legal advisor to the Board, also an investigation, I guess as well.

LCDR [redacted] And before we move on, again I apologize. When you do introduce your first name, please spell your last name.

Again, this is Lieutenant Commander [redacted] spelled [redacted]

MR. NEUBAUER: And my name is Jason Neubauer. That's spelled N-e-u-b-a-u-e-r.

MR. [redacted] And my name is [redacted] Last name is spelled [redacted]

LCDR [redacted] And now for the people online. Ms. [redacted]

LT [redacted] Good morning. My name is Lieutenant [redacted] I am the recorder for the Coast Guard's Marine Board of Investigation related to the Titan incident.

LCDR [redacted] And, Ms. [redacted]

LCDR [redacted] Good morning. I am Lieutenant Commander [redacted] last name spelled [redacted] and I am a technical advisor for the Marine Board of Investigation.

LCDR [redacted] Thank you. Mr. [redacted]

MR. [redacted] Good morning. I'm [redacted] I'm the

Coast Guard offshore engineer, and I'm a technical advisor to the Board, and that's [redacted]

LCDR [redacted] And now to the National Transportation Safety Board. Mr. Muise. And, Mr. Barnum.

MR. BARNUM: Good morning, Mr. Scoville. Bart Barnum from the Office of Marine Safety. I'm a marine casualty investigator, and the last name is B-a-r-n-u-m.

LCDR [redacted] And, Mr. Kramer.

MR. KRAMER: Yes. Good morning. My name is Dr. Donald Kramer, spelled K-r-a-m-e-r. I am a materials engineer with National Transportation Safety Board.

LCDR [redacted] And that covers all our folks. And Mr. Scoville, if you could please introduce yourself.

MR. SCOVILLE: I'm [redacted] Scoville. Last name is S-c-o-v-i-l-l-e.

LCDR [redacted] And are you represented by counsel today?

MR. SCOVILLE: Yes.

LCDR [redacted] And who would that be?

MR. SCHLOTTERER: Brad Schlotterer. Last name is S-c-h-l-o-t-t-e-r-e-r, here also with Andrew Young, Y-o-u-n-g. Both of us are with Kean Miller in the New Orleans office.

LCDR [redacted] Thank you very much. Sir, I just want to give you a little bit of background to the investigations process. Just know that you may change, modify anything you say in this interview or if you recall at a later time. You can let your

counsel know, and they can pass it to Mr. [redacted] and he can make those changes.

MR. SCOVILLE: Okay.

LCDR [redacted] You may also appeal the final results of any report of investigation that may result from this interview.

For information regarding Coast Guard and marine casualties, the *Marine Safety Manual, Volume 5*, is our guidance for conducting the Marine Board of Investigation investigations.

So, do you have any questions at this time? If not, we're going to go ahead and continue on with the interview.

MR. SCOVILLE: I think we can continue.

LCDR [redacted] Okay. Mr. Scoville, I'm going to go ahead and lead the primary or the initiating questions in this interview.

INTERVIEW OF DAN SCOVILLE

BY LCDR [redacted]

Q. If you can just start and do you hold any licenses or professional certificates?

A. I don't -- I have a seaman's license or something for Coast Guard, seaman's license, whatever the lowest thing is probably.

Q. Okay.

A. And that's about it.

Q. And is that active?

A. I think so.

Q. And, what is your education?

A. I've got three degrees. One is an auto mechanics degree, two

year degree. I've got a electronic engineering tech degree, two year degree. And I've got an electrical engineering, a science bachelor's degree.

Q. And can you please tell us your previous to OceanGate, your relevant work history?

A. So I spent 10 years at -- well, I start earlier real quick. I started out as a mechanic with my two year auto mechanics degree. Became an electrical engineering tech, worked for Kodak for 9 years as an electrical engineering tech.

And then I left Kodak and started at a company called Hydroacoustics which is subsea related. They did hyroacoustics sources for the military submarines, and also I had designed an ROV as a student, essentially as an electrical engineering student but I -- and I -- so I designed this ROV, and I sold the design to them. And, I went to work for those guys, you know, and worked on the acoustics sources, air guns for harbor protection, you know, subsea air guns for harbor protection and that's the protection for the military and the ROV design and continuing to improve on that model. So I worked for those guys for about 3 years.

And then I left there and worked for Oceaneering. Oceaneering is the biggest subsea company, you know, services company in the world, most ROVs of any company in the world. I worked in a group called Deepwater Technical Solutions for about my first 5 years with it. I worked there for approximately 10 years. The first 5 years is Deepwater Technical Solutions where

we did one off engineering designs for anything, any problem, BP, Exxon, any of the oil majors had subsea. So if they broke off a hot stab (ph.) or anything, you know, had a bent pipe, we would make a custom tool, one off, engineer it to go down there with an ROV, use that tool to, you know, extract the pipe, put 10,000 PSI into a prop (ph.) pipe subsea to pressurize it, to hydro test it.

One of the things, I got a lot of, I don't know, notoriety for there was I built an x-ray machine to take x-rays of pipes at 10,000 feet, digital x-rays. So we took -- we could take this -- I took this hospital chest x-ray machine, marinized it which means made it go subsea, and I had a low pressure and betatron source. I did part of the work on the betatron source, and we did that thing at 10,000 feet subsea to take x-rays.

So I did that for the first 5 five years approximately. I got enough kind of credit for that x-ray source that I ended up becoming the -- they moved me to a group called Subsea Inspection. So then I was doing basically Subsea and DT, not shallow stuff, because my stuff's all deep. So we had, you know, again tools we built for ROVs that would go to UT Subsea, x-ray subsea and EMAS Subsea. So I became the -- first I was like their technical guy, the formal technical guy for that group. Then I became the business unit manager for the Americas Group. That's Houston and anything happening in the Americas. And eventually I took over the global as a global manager for Subsea Inspection. So I did that for 2 or 3 years. I ended up growing that group into a

bigger group. Then I ended up becoming a global manager of Service Technology and Rental, something like that. I don't exactly remember any more, but -- so I (indiscernible) there.

And then I moved to OceanGate from there. On the personal side, my -- I am fully certified, I don't do it any more, but full cave, full technical diver, can dive to 300 feet. I haven't done that in a long time, and not planning to do it any time soon again, but I used to.

And then also that led me into looking for shipwrecks, 30 shipwrecks in the Great Lakes that had never been found before. The most historical one was a British warship called the *HMS Ontario* that sunk in 1780 and had never been found. I found it with the mast standing and is on the deck, all kind of stuff.

So that's kind of my -- I've been written up in hundreds of newspapers for that stuff over the years. At least that's how I got into it, diving, to the shipwrecks, okay, I'm going to make this my career. I built an ROV, sold the ROV. Found the *HMS Ontario* at just the right time to go Oceaneering and go, hey, interviewing at Oceaneering, and the guy's got a public -- like trade publication on his desk and you go, hey, can you hand me that publication? And pull it open and literally, you know, the month I'm there, the month I'm interviewing with him, you know, same month, I'm like in this -- the magazine, you know, with pictures of me and the ROV and the mission wreck, you know what I mean. So, that's kind of how I got into it, why I'm in it. I

love subsea stuff, you know. That's how I got there. And then I ended up at OceanGate obviously.

Q. Can you set -- now you had mentioned years, or a number of years at a place. Can help us build that timeline and provide us roughly or approximately the years at which you were there? So moving backwards.

A. Yeah, I can try. So ballpark. Like I can come up with at least a ballpark. I was at the Hydroacoustics for 2 1/2 years or so, 3 years. And I was there starting in ballpark -- Okay. Let's work backwards. Sorry. So I was at OceanGate from approximately April or May 2019, don't remember exactly, but in that ballpark, probably May 2019 until I was let go in -- right after the '20-'21 *Titanic* trip. So August, September timeframe.

Q. Okay.

A. Maybe even October timeframe. I guess we probably were out there in August, you know, and then we came back probably in September. So I was probably let go 4 weeks later or something.

Q. Okay.

A. So that was that one. Oceaneering, I started there I want to say in 2008, and then left to go to, you know, didn't have any gap between that and OceanGate.

Q. Okay.

A. So, you know, May, call it May 2019. And then Hydroacoustics would have been about a 2 1/2 to 3 year time span, maybe 3 1/2 years. I can't remember, but 2 1/2, just call it 3, prior -- just

directly before that. Didn't have any break, you know, or gaps. And then, you know, Kodak was 9 years prior to that, no gaps and, you know, the other stuff was, you know, I was still in school and I was an auto mechanic and all of that stuff. So.

Q. Great. Appreciate the background. That helps quite a bit. So now, let's move into OceanGate, and April to May of 2019. And just prior to that, if you could, I don't want to call it a recruiting, but how did you come to find OceanGate and then begin to work?

A. So I had a colleague who had returned from Oceaneering. He knew Stockton through like trade, like trade stuff, underwater intervention or something like or just had a casual knowing of him. I didn't know anything about that, didn't know anything about OceanGate. Stockton called him up and said, hey, I've got a, I've got a problem with my engineering team. I'm in need -- I need someone to come in and take over my engineering team. You're kind of retiring. Any interest? And, you know, I got the story from this colleague that he basically said, yeah, I'm not interested but I know the perfect guy for you. And he called me up, gave me that story and asked me, do you have any interest? I said, okay. Sure, I'll talk to him.

And I kind of like -- I like subsea stuff. I like the mission. You know, the idea of going to the *Titanic* sounded cool to me as I'm kind of a shipwreck guy. Not really a *Titanic* guy or anything but, you know, it's a cool thing to do. So that's how I

ended up getting introduced to the job.
Q. Okay.
A. Do you want me to go through the interview process or anything?
Q. Yeah, absolutely. I mean again this -- we're here for you. So if anything you want -- if you want to continue on, please do.
A. Okay. So, I interviewed with -- so they called me on the phone. I was actually in Aberdeen, Scotland on a business trip. Stockton called me. I interviewed with him on the phone one night there. Eventually went out to Everett and interviewed with him in person for this, and then, you know, that let to an offer eventually, and I eventually began to work for him.
Q. And, during that interview process, did he, at the time, which was approximately early spring of 2019 --
A. Um-hum.
Q. -- what was the vision or what was he selling? What was he recruiting you for?
A. He told me he needed help with the engineering. He had a team of guys that were really struggling and they were really -- there was a lot of bad attitudes or people with skill sets that didn't match up to anything. There was no subsea knowledge. There was no industry subsea knowledge at the company. There was nobody with -- there was maybe a couple of people with engineering degrees, but other than that, it was a bunch of -- I call them kids, 20 year olds, with maybe 2 year degrees. So those were the

guys that were designing the sub. I knew he was struggling with the engineering team, getting things done, just in general, and I knew that, you know, he was trying to go to the *Titanic*.

And, you know, he told me that he had a sub that was ready to go. He had already tested it at 4,000 meters. I was like, okay. Well, gee, this sounds, you know, it sounds relatively easy. It's going to be more of get the team in shape and get the ops going, you know, kind of wealth (ph.). And, he basically told me that he was going to step back and let the COO, who is a newly hired guy, and myself run the company. That's what he told me. I even asked, in one of the interviews, the phone interviews, I asked, hey, is -- when are you going to step back? This is what you told me, and he gave me some answer that was pretty non-descript, but he never stepped back. But that was why I wanted because I thought I was going to get, you know, basically to -- with the COO to run the company.

Q. And who was the COO?

A. His name was Bob Shuman. It's Bob Shuman.

Q. Yep. And what -- and again, what was your personal opinion of Mr. Rush during your initial interview?

A. He seemed personable. Had a vision, a little, you know, kind of the leading edge of technology but had a vision. He made it -- it was clear to me that he was a wealthy person and, you know, he could kind of bank roll this thing, didn't really know the finances of the company but, you know, got that impression. He

was the youngest -- I read his bio, and he's like the youngest pilot of a DC-10 or some airplane, you know, some big airplane that some kid's not flying around typically. You know, he got that at like 16, and I remember I asked him on the interview, I said, hey, how did you become this? And, you know, I was thinking -- I'm trying to understand this guy's financial status because like getting a pilot's license for a DC-10 didn't come cheap, and how did he pull that off? So he either had some crazy story or he had money, you know what I mean. So that's kind of what I asked him. And his response was, it doesn't hurt to have money.

So, you know, I get the impression he was wealthy. I made -- I don't remember for sure, but I did research on him, but I might have done some research and found out that he was. He's kind of like, you know, his parents, his great, great grandfather signed the Declaration of Independence, you know. He's an independent kind of guy.

You know, he offered to take me for a flight in his plane. We went to see his plane which was a home-made plane, and he started it up and taxied it a little bit but we never flew. I think now knowing what I know, it was a good thing but, you know, at the time I didn't think much of it. Overall, you know, he seemed like an okay guy.

Q. So now, you get hired, and you're working for the company. What was your -- if you could talk to me just a little bit about the corporate, the company culture, what you were coming into, the

engineering department, who you were working with and your overall view of kind of what you have --

A. Well, when I got there, you know, it's like, you know, start to learn things, right, obviously. So, you know, I found out the team was absolutely pissed, hated, hated life there. You know, I had all these kids that were either brand new hires or knew -- I don't want to say knew nothing but, you know, they really weren't up to the task of designing a sub.

The couple of guys that were electrical engineers that were kind of the head of the engineering team minus the guy that had the official title, they were so upset with the whole situation as far as, you know, disgruntled, that they didn't even come into work. I mean they came in maybe at 10 or 11 o'clock. They didn't call. They did nothing, you know. Some days they'd never come in. I'd call them like, dude, are you coming to work today? Well, car didn't start, you know. They'd give me some excuse. It was all bogus. But basically they didn’t come into work or if they came in, they came in at 11 or 12. They went to lunch at noon or something, and they left by 2. And I'm like, how are we going to get this done? We're supposedly going to the *Titanic* shortly thereafter, right, like within a month or two of me starting. They thought they were going to the *Titanic*.

So, you know, this team was a real struggle right off the bat. Like I mean these guys didn't want to participate. They didn't want to participate with me. They didn't just -- I didn't

have like issue with them because I was brand new, but they just -- they didn't want to do anything. They couldn't really accomplish the tasks anyways. You know, I'm not saying they were stupid or anything. They accomplished stuff, but not well.

On the sub side, I got -- I mean the sub was basically like a high school project. That's how I term it. This thing was -- they had a *Titan* completely built, completely, it's not right, but you know, fully assembled. They built it to they said 4,000 meters. I mean you looked at the systems on it, and I was like, you know, these are high school designed systems. You know, I thought I could help them a lot because I knew what this thing should look like, right, from my experience at Oceaneering and all that kind of stuff. But I had -- but they, you know, these systems they had and the way they built them like it couldn't keep them running. This was why the team was so upset, right.

They'd go to the Bahamas. They didn't -- so they didn't test the sub at a facility because they didn't think they had time or they didn't want to spend the money. I'm not sure. I wasn't there for that decision, but -- so what they decided to do was go to the Bahamas and test it because the shelf is close. So they could drag it 7 miles out and they're off the shelf, and they could go dive.

But -- so they're working on this stuff in the elements. You know, the sub's outside. Their workshop is literally a junk pile in the Bahamas in a little harbor where they had set up plywood

they pulled out of the dump junk pile onto, you know, ease (ph.), whatever the little triangle things, I'm missing the word but, you know, whatever they could find to set up the plywood from the dump pile and where we'd have all the -- they'd have all the stuff and that's where they worked. Sand everywhere.

Anyways, they couldn't keep the sub running long enough. So they hired a boat. The boat would come. The boat would sit and a lot of times it wouldn't be able to dive because the sub just couldn't (indiscernible). So that was kind of a landscape and, you know, my thoughts were this is an actual disaster but I can help these guys. I can, you know, I know what this thing is supposed to look like. I've designed lots of subsea stuff, or I can be a leader of that or a manager of that, whatever. And I can seriously help these guys, and I can help them fast if they, you know, that's what I thought I was there for, right. So I thought I was going to be able to come in and address lots of problems right away. That's what I was kind of hoping to do.

Q. And then so the dive to depth and just so we're speaking, so the first *Titan* hull.

A. It was.

Q. And that was approximately when you came on. That was in April, April 17th of 2019. So just right around the time that you had come on, correct?

A. The dive was April 17th or -- it was right around the time I came on, yes.

Q. Yeah. Okay. So, were they aware yet that the first *Titan* hull had delamination and --

A. So, I was not aware. I don't think anybody there was aware but the hull -- so they went through this dive I assume on April 17th or whatever said.

Q. As per, as per the log.

A. Okay. That's right. They went for this dive. They put four people in the sub I believe. And then they, you know, we dragged the sub out to the shelf and they dove it, and the, you know, I mean from my standpoint, you know, I'm brand new. It's like not my first day but close to my first day, and I was just kind of watching the process, right. But, they dove it. They tried to go to depth. They wanted to go to 4,000 meters. My understanding is they hit bottom before they got there. So they tried to drive down the slope and didn't get there. But, they came up and the, you know, what they told us was they were hearing noise in the hull the whole dive, from like 500 feet to the bottom, and now the way back to 500 feet. They were audibly hearing -- on guy said that it sounded like a trickling sound. It was a constant trickling sound, and he said it was right over his left, you know, it was like in the front of the sub on the side or something, and he said it was right over my left, and it was constant noise, a trickling, kind of sounded like trickling water. And he said it didn't stop. It started at 500 feet and went to the bottom all the way back to 500 feet.

You know, Stockton's kind of response to all that was -- it's sort of like, I don't know. I don't know. It was interesting but that's no big deal, right. That was basically his response. He used to kind of joke with as he would say this is nothing. He'd say this is nothing. That's the way he said it. So I picked this up from him, and -- whenever there was something weird going on, it was, oh, this is nothing, you know. Not to mock him, but you know what I mean (indiscernible).

So, yeah, he basically said this is nothing. This is normal. The hull is seasoning he would call it, and so they continued on. My assessment was I had no idea about the hull because I didn't -- I wasn't there for the construction. I didn't know anything about it. I'm not a carbon fiber guy, but I, you know, I'm thinking. This doesn't sound right.

They had an acoustic system in the sub. I don't think it worked that dive. I can't remember for sure but, you know, if it did, they got negative results obviously because they were awed with hearing all this stuff, and it was more sensitive than that. You could pick up stuff you didn't hear easily.

And so, you know, but Stockton was like full bore. We're going to the *Titanic*. I told Bob, our CEO, about the general situation. I said if we go to the *Titanic* you should not expect to get a single dive in. Like you might get one dive in weeks but this thing is not going to -- you are not going to be able to service this sub. It is not going to work. You're going to spend

all your time working on this sub. You're going to not be able to keep it running, and you're not going to dive.

So, you know, that was, that was something we talked about. Stockton's thought was, no, we have to go or the company's going out of business. That was always the -- always the tradeoff was this nuclear option of the company's going out of business if we don't do this to the point, for an example, when we were on a *Titanic* dive, there was a situation where we had a weight, a weight drop problem, right, and the -- they were on the bottom. They needed to the weight carriage. There was no backup system to dropping the individual weight. They had already dropped one weight carriage on a couple dives earlier. So now like this is our final spare. They don't want to drop it. So Stockton's solution was that he told everybody we're staying down for 24 hours because in 24 hours the squids (ph.), you know what I'm talking about, the squids would burn off, right and drop. And so then he'd just start drifting up. Well, that's a workable plan, but it's a terrible plan because it's like puts these guys 24 hours more into a problem that's already got one failure, the chain, right. So you've got a couple failures more and now you're, now you're in big trouble right. You've used up the 24 hours of oxygen plus, you know, you just, you know, you don't want to sit yourself further into trouble once you've got a failure, right.

So, that was his solution. It ended up being a big argument

between the sub and topside. I was the mission director which means I'm supposed to have control of the situation overall. And, you know, I texted down to the telemetry or I texted down, hey, you're going to have to come up. And he -- the response was basically we'll put this on hold, you know, put the topside on hold. I don't remember his exact words, but it was basically hold on. We'll discuss, right.

In the sub, we have -- the word I got from the -- another crew member of the sub was that Stockton went around to each passenger or mission specialist and he said, are you, are you willing to stay down here for 24 hours because if you don't, the company's going out of business. So he pressured those people to say, yes. The only person who, from my understanding, wasn't in the conversation, but from firsthand information afterwards, the only person that said no was Kenny, sorry, one of copilots, and he, he basically texted up to us saying, I'm, you know, I'm done. Call my wife, tell her get me a plane ticket, I'm saying, right, because when I get back up, I'm quitting. So that kind of came to big head obviously afterwards, but the main point is, you know, Stockton pressured everybody down there to stay down there for 24 hours and get into more trouble basically. Kenny was the only one that said no.

So my point is that he was always using this nuclear card of, well, if we don't do it my way, the company's going out of business because we don't have time for anything else. And I was

kind of like, well, some of these other things, if you do it the wrong way, you know, you've got a major problem. You might, you might build something unsafe or something that we test and doesn't work. Then he's going out of business anyways, but you know what I mean. Like you -- I always would tell him it's better to wait a couple, you know, slip the schedule a little bit, get it right, and then you've got something to use. If you don't build a sub you can use like all this is a waste of time and the money's gone, right. So that was one of my kind of arguments, pushback. So.

Q. And just so we're -- that was Kenny Haig (ph.).

A. Um-hum.

Q. And do you know approximately when that specific incident took place? Within what -- was it expedition 2022?

A. It was 2021 expedition. That was their only expedition I was on. I remember what that was.

Q. So that was approximately dive -- maybe dive 61, maybe 65, around that time?

A. If you -- you guys provided me the log, right?

Q. Yeah.

A. If you look in the log, it's the last hinged (ph.) dive Kenny'll be on because after that, he left the ship, if I remember right. He left the ship -- not immediately. He was still out there. So we had to wait to get back to port, but after he got back to port, he left the ship, and secondly, Stockton told him, he's never going to dive again in *Titan* because he wasn't --

didn't have the right mindset. He wasn't a test pilot. So he couldn't dive. So you'll -- whenever the last time you see him on the log, that's the date.

Q. And just for a reference, it appears with the guide log, Mr. Haig's last dive was 065 on July 19 of 2021.

So, just -- I kind of want to go back just to discuss -- we really appreciate your talent, what you had witnessed and been involved with. So, it seems that if -- as you stated with Mr. Haig, he didn't have the -- he was a -- he did not have the proper mindset to be part of the company.

A. According to Stockton.

Q. According to Stockton. We notice that there's a lot of turnover of employees and personnel at the company. Is this the reason why you believe that there was a lot of turnover and why people left as they weren't heard or they really wasn't -- if you can just tell me in your own words.

A. Yeah, I totally. I would encourage you guys to go read the exit interviews. You know, I don't know if everybody -- I don't recall doing one, right. But, some of those guys I was telling you about, like those electrical engineers, they left shortly after I got there. They filled out -- at least one of them filled out a right to interview, maybe both, but I for sure read one of them. You know, it's notable from, you know, when I first got there. Like -- so I read this guy's exit interview, and he was pretty blatant about what he thought was going on at the company

which was essentially, you know, Stockton's making a ton of terrible decisions that are causing this company to fail. He's building unsafe stuff. He makes unsafe decisions. Your Honor, there was always financials. Everybody was underpaid. So, you know, that was a factor, you know. People would leave because of under pay, but I know in several cases, people left specifically for safety. I, you know, one technician -- I had a project manager, she had started as a technician, became project manager after she got her degree, she came back to work for OceanGate and, you know, she and another guy specifically told me they were leaving because of -- they weren't going to go to *Titanic* because they didn't ever want to go on a mission with Stockton.

So *Titanic* was the first, what do you call it, expedition I went on with the company. They went on other expeditions before I got there or before I -- well, before I got there, yes, but also once I got there, they did some expeditions off the East Coast where they would take these, you know, the technicians and this project manager had gone on all these missions. I stayed back in the office because I guess I was working on *Titan*, and I had too much work to do there.

So they would take *Cyclops I*, go out there and do some missions off the East Coast and, you know, there was -- the guys -- the people that did that would always come back and make complaints about this or that, right, safety complaints. I'm not sure every single one of those complaints was valid. I wasn't

there. So I recall one of them being like, hey, going out in the boat and the high waves, you know, yeah. I know, but it's part of the job to some extent, and you've never been in a small dingy at the time maybe in big waves and supposedly you're comfortable with that, you know. So it could be some of that.

But there were definitely decisions that I saw all the time that Stockton made that were unsafe and inconsistent with, I don't know, stuff that didn't make any sense to me. So what was your initial question?

Q. The initial question was basically do you believe that Mr. Rush's, you know, his attitude and the way he ran his company was the reason that there was so much turnover based upon --

A. Yeah.

Q. -- my way or the highway. And I'm paraphrasing and you did not say this, but like my way or the highway.

A. Yeah, generally. So I was, you know, I definitely think that people turned over because the company's atmosphere wasn't great. And Stockton made decisions that made no sense to most everybody, and people didn't feel safe. So that I totally agree with.

And then on my way or the highway, you know, there was times I was like, well, I don't know, I called the arguments, right. We argued over almost over every sub, the system/design. I would design or my team and I would design something. We'd present it, and then Stockton would say yes or no basically at the end of the day. He made the final choice because he had the money, right.

He was the CEO. And so, you know, there were days I won those and long term I won a lot of them. You know, if you look over the 2 years, like the sub that they made before I got there, the sub that we took to the *Titanic*, while they looked the same from the outside there was, you know, a lot of improvements, tons, where I brought in an engineering rigger and engineering processes, documentation, all these things, right. But if you -- but I had to fight for all those things, and there were days when you just weren't ever going to win.

Q. Yeah.

A. There were days when I was told no. I'd try again on another day and still told no. Try again on a third day, and I'd get it. So, you know, it's a mixed bag there, right, but in general, it was always his final decision. I would just keep trying until I got a yes sometimes and sometimes I'd never get a yes.

Q. And just to back up a little bit, do you -- can you provide us with the names of the -- I believe you said electrical engineers.

A. The ones who left.

Q. The ones that left.

A. Nick was one of them. Sorry if I don't remember his last name. Let me think about. Nick and Mark were the two names.

Q. Okay.

A. I mean I -- Nick, yeah, I don't remember their names off the top of my head. Mark. They were there when I got there. They

had been there maybe 3 or 4, 5 years. I don't know. I think there was a female.

Q. The project manager.

A. Yeah, she was, you know, she came in with -- Tony brought her in. She worked there for a little while. I don't know exactly how long, but not long. My impression was she -- so when I first got there, you know, okay, a month in or so, you know, we got a crack, right. Back to that crack thing in the first hull. So now we're not going to the *Titanic*. And we're, you know, eventually the sub makes it back to the shop but, you know, ultimately what's that mean for the business. Stockton think he's about to have, you know, all this, you know, good stuff happening, possibly more passengers, more money, whatever. And he's got suddenly -- he said he's got a sub he can't use and (indiscernible), right.

So going back to the, going back to the shop with it, and -- I'm losing my train of thought. What was your question again? Sorry.

Q. The initial question was what was the name of the project manager?

A. Yeah. Okay. So came back to the shop, and Stockton, you know, told me to lay off basically 80 percent, 50 percent, 70 percent staff, you know, the engineering staff. And, you know, Tony Nissan was still there. My comment was kind of like really. Like I don't even know these people. I haven't even worked with them. How am I going to pick who to lay off, like I don't know

who's good and bad yet. We haven't worked together. I don't, you know, like Tony had, you know, six 2 year degree people designing the sub on the mechanic side, and then he had Nick and Mark and there was a software guy.

And so I'm like, you know, shouldn't Tony lay these guys off since he's the, you know, he was the director that hired these dudes. Anyway, basically the answer was no, you're doing it, Dan. So, you know, I eventually picked people and I laid people off. She did not get laid off because I was trying to (indiscernible). People seem to like her, whatever. But she basically came in and said, hey, that, you know, when I told her, hey, you haven't been laid off, you know, in an awkward meeting basically, she was like, well, I don't know. I don't know if I can keep working here now. All my friends are leaving, you know, kind of saying. You know, she had adopted the team as the mother figure. This is my words, you know, not hers but my opinion was she adopted this team as the mother figure. She was being protective. She was going to take care of them. And she couldn't continue. And I was just fine with that. I was like, as soon as she said that, I was like, okay, please leave. You know, I didn't say it that way but I just was like, okay, well, why don't you take the weekend and think about what you want to do. If you don't feel like you want to be here, then I'm -- if you're not 100 percent, you need to leave. You know, I didn't tell her that, but she chose to leave because wanted to spend more time with her family or something.

Q. Was her name possibly been (indiscernible)?
A. I don't think so.
Q. Okay. Cool. So obviously we want to get into the engineering, your relationship with the new *Titan* hull. But I just want to circle back quickly with regards to the operation. So, what was the relationship between the engineering and the operations team?
A. When I got there?
Q. Yeah.
A. They didn't talk. They hated each other. I mean both of them came to me when I first got there, and basically said that guy's a horrible guy, the two directors, Tony Nissan and Scott Griffith. They basically pointed the finger at each other. As far as I could tell, they didn't talk at all. They didn't share any information. The engineering team was like, no, this is my information. I'll give you the sub when it's ready and you don't need to ask any questions. That was my interpretation of it. And the operations team was like, well, we don't know anything. So, you know, how do we know if it's any good. You want us to dive but we don't know what to do. There's no procedures. There's no documents to tell me what you did. There's no engineering docs. There's no -- hardly any drawings.

They literally -- when they gave me parts to build something, I mean hopefully they had some kind of like assembly procedure but I didn't see many. And then they literally counted -- if it said

seven 1/4-20 bolts, they counted out seven 1/4-20 bolts and they had seven 1/4-20 bolts. I said, come on, just give me the box of bolts. Here's 1/4-20, 1/2 inch bolts, like if you need eight, because you dropped one, go for it, you know, but they literally counted them out and gave them only seven.

Totally dysfunctional in my opinion. You know, I don't know what else to say but just absolutely disaster.

Q. And as an experienced person in the industry as yourself, how important have you seen -- how important is that relationship between the ops and engineering team?

A. I mean it's pretty important if you want to get something to work. You know, the engineering team's not going to supposedly operate it, and if you want to operate safely and have people all in on the team, you know, you basically need a team that cares about this thing all the way around, and if they're blocked on this end and ops can't -- if engineering can't tell them why it's safe to dive in it, why would they dive in it? I mean I don't know. It's just a disaster. It was totally dysfunctional.

Like I could see, you know, like I said earlier, my old colleague who called me up and said Stockton said he needed help with the engineering team, that's basically all he told me, but I don't know what else he knew either, but I can see why he needed help, you know. Like he couldn't get anything done because everybody was pissed off and barely working. He didn't build any systems that were maintainable. So like things couldn't be

functioned.

I mean just to give an example. They had this drop weight system they had, there's this big underslung carriage that they put pipes in. That didn't feed (ph.) very well. So it was constantly jamming. That was problem 1.

Problem 2 was they had built boxes, subsea boxes with like a motor from Amazon. The motor was just a straight up motor, a little gear box on the end that was part of the motor. It hooked into a shaft that was made from cutting an extension of a 1/2 inch of a -- of a 3/8 inch socket -- ratchet extension. That was their shaft. There was no bearings anywhere on that shaft to support the shaft to keep it in line with the motor. There was machining done. So the machine was all hand drilled holes. So there was no alignment between the shift and the motor. There was no -- nothing to keep it centered on the seal which was maybe not a big deal, but it looks like kind of seal you get from McMaster-Carr that wasn't an O-ring. It was like lip seal.

The box was made out of a DigiKey plastic, you know, like 1/16 inch or less plastic, you know, something you'd buy if you were an electronics guy and you wanted to build up a little project, you know, test project. The box was built out of that. There were zero O-rings in there. So they used a piece of -- I don't know what the material was but plastic, you know, see through-ish, semi opaque material, plasticky material, as their O-ring, but they used it also their comp (ph.). So, you know, you

can sort of do that but, you know, it's like -- so basically instead of looking -- setting up a pressurized comp, pushing in that box, they just had this piece of plastic that could flex with the pressure.

So this is the box, and Stockton's wondering why we can't keep it running. And he blamed -- and he said -- and I'd say, well, Stockton, it's not fit for the purpose, and he'd just blame the team. His reply was the team is not maintaining the sub. I'm like, you cannot maintain this box. It's not maintainable on an offshore basis. It's not maintainable in the Bahamas, and when you're working, it's not maintainable period. But it's not -- you can't maintain it in the Bahamas when you're working in the sand, and you're working on some plywood and you don't have, you know, there's no O-ring to replace to fix the leaks. So this is why we couldn't dive and couldn't get dives. The boat would sit there. We're going to dive some day but, you know, it didn't happen because the boat would eventually go away a lot of times. We might want to dive 2 weeks later or something, but you just couldn't make any system.

I remember one guy in the Bahamas working on that box over and over again trying to stop it from leaking and, you know, by the next morning, it would be leaking again. So what -- I mean we've tried to improvise, took plates and tried to squish the box together like this with bolts, you know, on the sides. The designs were not maintainable.

I don't know if I answered the question. I can't remember what the question is now.

Q. You answered a lot of questions.

A. Okay.

Q. And, we're going to go over -- we'll try to take a break every hour, if that's okay with you.

A. That's good.

Q. But I want to just stay on that maintenance. So, as the engineering director -- or what was your title actually?

A. When I first came in, I think it's in here somewhere. He gave me some crazy title. I thought I saw it here.

Q. Okay.

A. I think it might be on one of those emails or something that you guys provided. It was something like director of marine integration and operations or something like that. He always told me I was going to be the director of engineering and he was going to get rid of Tony. I knew that going in. And so then, you know, we found the crack. I think he was going to get rid of Tony right away. I didn't know, right. I just knew Tony was going to be let go according to Stockton. And then, you know, I think that he wasn't probably going to get rid of him immediately because we were going to the *Titanic* supposedly and, you know, a month after I was starting-ish, the boat was coming, you know, Trinidad, to pick up the sub in the Bahamas and then go up to St. John's, right. So I, you know, it was kind of an all hands on deck thing.

They were even talking about hiring people, right. So (indiscernible) and bodies, right, to help maintain this thing, work on it and all that. I knew, I knew Tony was eventually going away, but he gave me this bogus title to start with.

Then eventually -- so then we didn't go to the *Titanic*. They found a crack in the hull. The hull came back to Everett eventually and then, you know, Stockton pretty quickly started getting rid of Tony. First, he kind of took him to lunch and gave him a couple of heads up kind of conversations, and that's what Stockton was telling me. Kind of gave him the, you know, hey, dude, you know, we kind of screwed up. We haven't made to the *Titanic*. We got to, you know, we've got all these problems. We've got people suing us. This was another part of his general things. Hey, people are suing us. We don't have any money, right. So anyways, you know, basically let him go through several conversations. Eventually told him he was going to put him on a contract basis, as needed contract basis, and he kind of weaned him off of that. And that's what I think he did in general. And it happened relatively quick, a couple of months or something.

Q. So you were only on one -- oh, sorry.

A. I didn't finish.

Q. I apologize.

A. No, it was me. I stopped. That's when I got the director of engineering title, you know, officially. There was no ceremony or anything like that. Everybody already kind of knew I was going to

be there to take charge like. I don't know if Tony knew that when I got there but, you know, I think the team figured out really quick that I was going to be the boss, you know.

Q. And then when you -- then were you able or were you given an opportunity to make your own team? I know you had some layoffs. Were you able to hire --

A. Yeah, one --

Q. How did you set up your engineering?

A. So the first thing was who's on my side, right. You know, here I've got this population of people. So the first thing you do as manager when you get into this situation, is like, okay, here's the population. Who's on my side? And do they have any skills? If yes, you keep them. At least you keep them for now, all right. So you kept those people if there was anybody on my side at that point. I think the only person on my side like Scott Griffith. I felt like he was on my side. He was so excited to see Tony leave and anybody else come in that might work with him and be like, you know, try to work together. I had no problem with him. So that was the first thing. Who's on my side?

The next one's like who not on my side at all? They can go. And, you know, then who are the fence sitters and can I win them over? So that's kind of the process. I mean it was, you know, I ended up having to make a layoff right away. So, you know, if he had -- I don't remember the exact number but if he had six 2 year engineer people, 2 year degree people, I had to get rid of five.

Okay. I got rid of the five. Jackie left. Jackie's the PM's name. Now, I remember. Her name was Jackie. Jackie left on her own accord. Then I had Mark and Nick. Those guys, like I said, their attitude was terrible. They, you know, I was trying not to get rid of them but salvage them because they were not really on my side but they had the knowledge from the history. I needed to like where skeletons -- you know, before you fire everybody, you end up with nothing.

Q. Yeah.

A. And you don't even know what's been done. Where are the bodies are hidden, you know. You've got to learn that stuff. So I tried to keep those guys but basically they didn't want to be there. So, you know, it didn't last long, maybe a couple of months, 3 months maybe. And then those guys both quit.

So then I was -- I had colleagues, you know, from industry, and I got one of my colleagues to do contract work for us. So a lot of the mechanical engineering happened through him. He wouldn't do anything on the hull because he didn't feel like he was covered by the company in any way, you know, through the contracting agreement. The contract agreement says you're a sole provider kind of person and it's all on you, you know. We don't cover you for anything, right. I don't know the exact words, but that's the gist. So he wouldn't work on the hull itself, but he would help me on all the systems and this guy's -- you know, I love this guy. I've dragged him around through three jobs now.

He worked with me at Oceaneering for 10 years. Eventually got on my team by some stroke of luck, I got him on my team, you know, and then he's helped me every since. I've been taking him from company to company the best I can. You know, he's got a real pay job now, but I use him after hours. So he helped me out on the mechanical systems.

Phil Brooks, you're familiar with him. So Phil came in maybe a month before I did to OceanGate. Tony didn't like him. He was brought in to help with some software stuff. Tony wouldn't give him a desk. And so he literally sat at like a soldering station at the other end of the totally messy shop that they had. Tony's team was all over here. Operations was banded from the room. They had to be up in like this mezzanine and Phil didn't get to sit with the team or anything. I pretty quickly thought that, hey, Phil seems like that, you know, one, he wants to be here. So that is a huge plus, and two, he's an older guy that seems to have some experience and sounds like he's got some good work history. And so I immediately adopted Phil as like my go to for software because Mark and Nick were the software. They were the two engineers and software guys.

So I adopted him figuring Mark and Nick wouldn't make it. Tony was trying to get rid of him. He was a contractor technically, and Tony told him go work from home, you know, you don't need to come in. It didn't sound like a long-term solution that's going to work. We weren't -- this was before COVID when

work from home was still kind of not done, at least at OceanGate was not done. You know, where I came from at Oceaneering, there was like 6 people in an 8,000 company that worked from home. You had to be super special to work from home. It just wasn't done. It was basically like I'm either quitting or you're letting me work -- or you're letting me leave. I'm moving, and you can keep me or not, but it's up to you but I'm moving. That's how it got there. He was really, really good. So they're like, okay, we'll do it, but there was six people. I didn't get to work from home, and I felt like I was really good, you know, so. And I didn't even try. It wasn't a perfect culture. So anyways, yeah.

I adopted Phil. That's where my software help came from, and then there was one other guy, Jerome Santos. My take on him was really low motivation initially. Says he has a full software engineering degree. I was sort of not -- I even got him to show me it one time. I wasn't 100 percent sure because he just didn't have some of the basic background knowledge that I just can't imagine how you got there without understanding some of this stuff, right. So, but I kept him because if Phil got hit by a bus like I would have no idea where to start, nothing. I'm not really a software guy. I've written some code but it's -- I don't even know where to the repository is, you know. I know it exists. I know he could find it if we had to or we can hire someone to find it, but I don't know where it is. I couldn't even, you know, get us back up and started without hiring somebody else. So I'm like

-- Jerome, we didn't pay him squat, you know, for what his education was. So I kept him and, you know, he was a personable guy. He was quiet, didn't cause any problems and like I gave him to Phil's under study.

And then besides that, I had this guy -- hopefully I'm not taking too long here.

Q. No, continue.

A. I had a guy that -- he was one of the -- he was like if there were six of those 2 year, you know, mechanical guys that Tony was using to build the whole sub, if there were six of those, the one guy I kept was -- like I said before, I didn't know these guys. I didn't know who to keep or not keep. I kind of asked Mark and Nick for their opinion but, you know, I didn't know what I was really getting. So I kept this guy because he had helped them build their 3D printer. Like that was the differentiator, right. All these guys were basically the same as far as I could tell. This guy built the 3D printer and runs the 3D printer from desktop and, hey, okay.

Q. I'll pick him.

A. He seems to be interested in engineering stuff at least. So his name was Jeff Anders. And, he was a great guy, not stupid or anything like that, but he really did a mechanical engineering engineer mentor, right. I -- my big thing for him was like I need to find this guy a mentor that sits next to him every day and helps him because this is a smart kid. He just doesn't have any

work experience and he doesn't have a mentor. And so I was trying to hire in a mechanical engineer for that. I did get a mechanical engineer. I got two different ones. The first one I let go a couple of months in, maybe even 6, you know. He just didn't have any technical expertise that I felt like we needed. Like he couldn't -- the big thing that maybe pushed me over the edge to let him go was we build this iron sub. It's basically an 80/20. Do you guys know what an 80/20 is?

Q. No.

A. Okay. It's just a frame that hold all the sub gear so that when the sub's in all piece, we can kind of connect all the gear electrically and then run all the little pieces, right. So it's just a fake frame. It doesn't look like a sub or anything, but it's a big metal frame you can roll around the shop and hang all kinds of stuff on it, right. And, we -- sorry. I forget where I was going now.

Oh, why I hired this mechanical engineer. So, we had, you know, we were designing this thing up, and I'm like, listen, you know, like we need a 1/2 inch plate for the table service. We need 1/2 inch aluminum or I forget if it was a 1/4. Like it's all I wanted, you know. Like you don't design every piece of this and the engineer would map every piece of this stupid frame, right. You can overbuild it, and we'll be fine. So, you know, it's like the difference the 1/2 plate the size of aluminum and a 1/4 inch is significant, but let's engineer that. And, you know, basically

I wouldn't say I need it in like 3 or 4 weeks or something, do the math, to tell me if we really need, you know, 1/4 inch or 1/2 inch plate and he couldn't do it or he didn't do it. And so finally I was like I need something. I told him, we can do this as minimally as you want. You can put -- you can assume one force in the middle, you know, a support at each end and will it buckle in the middle, you know what I mean, and we can over design this so it doesn't never do that but just let me know. Is it 1/4 or a 1/2 and have the reason. He couldn't do it. So I finally let him go.

And then I was talking about replacing him with another guy, liked the other guy better, same kind of issue. Didn't really have the detail thing for a guy, helped Jeff, you know, stuff like that. Both of them come to help Jeff as their mentor, but when COVID hit, Stockton was like is this your forever guy, you know, or not? If he's not, let him go.

And Stockton promised me after COVID he'd let me get somebody else. And I'm like okay. I was still have trouble with that same kind of basic like, give me a little more trouble. So I let him go. His contract was easy, you know, no issue. And then after that, Stockton never let me hire another mechanical engineer.

So, Jeff got, you know, in my opinion, left out in the cold from a mentoring standpoint. You know, I'm pretty good with that mechanic stuff, but I'm not a mechanical engineer. My education was electrical engineering, you know, and I've been a manager for a long time. So, you know, I don't do the rigger and the

mechanical engineering that some might. A lot more than OceanGate ever did. I brought in a lot of stuff but, you know, I mean like I'm not necessarily the guy to make the final calculation, right, the FEA maybe. So anyways, Stockton never allowed me to hire anybody after that.

Q. We're coming up on an hour. But I want to quickly wrap up with something else a little more operationally. So while you said you were only on the one expedition in 2021, so 2022 and beginning of 2023. So when there were maintenance issues which you have identified that there was a lot of maintenance or corrective actions needed while the vessel was under -- when the vessel on an expedition, who would, who would complete those corrective actions?

A. On the mission I was on or the missions that --

Q. Well, start with the missions you were on and then we'll go to the --

A. So I was on all the 2021 missions, the whole mission, I was there for the entire thing. Myself and the engineering team and the operations team would work on the sub. Stockton always had the idea that the mission specialists would work on the sub, loved that idea. He loved that idea. I hated that idea not because these people aren't educated or anything but we're trying to get this thing running. We're trying to, you know, put this thing to sea, get it going. Having mission specialists, having to train a mission specialist to do something, you know, mechanical or

electrical on the sub made no sense to me.

So, you know, like it was just a distraction but it was -- I think Stockton wanted this and that done, you know. These people need something to do. They're out here for 8 days basically stuck for 1 dive, and you need to put them all to work. So you'd try, but I mean generally I -- unless Stockton brought them out and said, hey, here's your person and you would try to do that sometimes or you would schedule it so that, hey, anybody who wants to work on the sub today, meet down at this spot at 8 a.m. and, you know, there would be your, you know, one of the guys would show you what to do, you know, and none of us liked that. We all felt it was not a great situation, not that somebody could hold something for us somewhere, sure. That could work. But, in general, trying to train somebody to work on the sub, that may or may not have any clue about the sub. So anyways, we would -- I would work on it. I worked on it probably 12, 14 hours a day every single day when it was out there, and then most guys on the crew would work on it, you know, if you're game and the ops team would work on it, same, ditto.

I tried to get Stockton to give us 12 hour shifts meaning we have 2 teams. This is the way industry does this, you know, in general, at least the industry, you know, Oceaneering. We would go out in 2 - 12 hour shifts so that you'd get rest, diagnose. No, we're not doing that. So he wouldn't give me enough people to do that. So we would -- we'd all be on one shift. We'd get up at

7 a.m.-ish, you know, kind of thing, 6, 7 a.m. on the day. We worked until basically until I said the work was done for the day or we collapsed, not literally collapse, but we were just tired to do anything. So there was, you know, long days. So I don't know. A new sub. You wouldn't expect to build brand new car and never have a problem with it on your first trip, you know what I mean. Like this was just reality. You work on this thing. So that was -- that's who worked on it on my trips.

On subsequent trips, I wasn't there. So, you know, what I hear they did was stuff like -- I knew, you know, I heard from the team that they cut the team down a lot, right, like as far as, you know, they didn't replace me. They moved somebody else into my position, gave them part of the job I used to do. And so, you know, they didn't -- they weren't hiring people in general. So they went out, my understanding is, with less team, definitely went out less educated, you know, or trained or, you know, experienced people, and they had brought in some contractors, that don't know the stuff at all or know little. I think they brought in at least one guys that does know subs, you know, in general. And that's who my understanding -- it's my understanding who they went with the second year, and then the third year my understanding is it kind of got even worse as far as what it looked like. I know Phil left the company right before the trip, right. So now you've got like your top technical guy that really troubleshoot, you know, electrical system and all that kind of

stuff, he left right before that. so I think they were just kind of filling in with anybody.

Another thing Stockton thought he would do and thought was great, he wanted to, he wanted to get people to go out and do the *Titanic*, work on the *Titanic* missions for free or work for OceanGate for free period, just like come in normal hours, stuff like that, work for free, and the tradeoff was you get go on the *Titanic* mission. You don't get to go to the *Titanic* or anything, but you get to get on the ship. So, you know, in my mind, I always fought against that. I was like this is a terrible idea, you know. Like I don't want these people on my team to be honest. They could take people out there, but like I don't have people to train them to figure it all out, build your stuff and all this stuff, and then have some guy that really knows nothing just tagging along. So -- but that was his big thing. He was trying to save money, cut corners. He was trying to basically get people to work for free for the opportunity to get on the ship and have an adventure. I don't know that he got anybody. I don't remember. I kind of feel like maybe one person tried it for a couple days, and then bailed out, you know, not on the ship, but never got that far. Like, okay, maybe. There was definitely talk of people doing it, but I don't recall for sure that anybody did, and if it they did, it was short term, but that was one of his strategies for cutting down costs.

Q. Thank you.

LCDR [redacted] We've been going for approximately 1 hour. It is -- the time is 10:38. We're going to go ahead and --

(Off the record.)

(On the record.)

LCDR [redacted] [redacted] can you go ahead and ensure the recording has started.

LT. [redacted] I will resume recording in and I gave them the heads up that that would be -- that you would need to realign some questioning because there are a couple of (indiscernible).

LCDR [redacted] All right. Sounds good.

LT. [redacted] The recording is resumed.

LCDR [redacted] Okay, great. Thank you. Thank you very much.

BY LCDR [redacted]

Q. So jumping back in, just to discuss, you had mentioned the use of mission specialists. In your work at Stockton, what -- can you describe to me what a mission specialist does?

A. A mission specialist in my personal opinion was basically just a passenger. Stockton had a rule about you couldn't call mission specialists -- or you had to call them a mission specialist. You couldn't call a passenger or tourist. I wasn't part of that discussion. It wasn't part of my purview under engineering or operations. That was a sales kind of thing. It was a part of business but I thought it was weird, you know. He was really adamant that we couldn't call anybody a tourist or a passenger, that we had to call them a mission specialist.

Q. What is your belief of why he would call them a mission specialist rather than a passenger or tourist?
A. I thought he was essentially trying to get around, get around something, you know. We had a Coast Guard admiral on our board, you know, so like I felt like well -- a retired Coast Guard admiral. He seemed like a really good guy to me. But, you know, I also felt that if we were doing something not quite right that he, you know, he would weigh in on that. Maybe he did, maybe he didn't. I don't even if he knew we were doing something 100 percent wrong there. Like I said, it wasn't part of my operational or, you know, purview or anything like that, but I just thought that the fact that -- I didn't have a problem with calling them mission specialists, but the fact that we were so militant about nobody being able to call them anything else, you know, couldn't make that mistake, you know, a mistake you could not make, seemed strange.
Q. And Mr. Rush was very adamant about that?
A. Yeah, totally adamant. Absolutely could not -- would not allow those words to be used.
Q. And so mission specialists are people who have -- did missions specialists pay to join the company, to be part of the expedition?
A. Yes.
Q. So these people who paid to be part of the expedition, they came to have an experience --

A. Right.
Q. -- on the expedition. What was their role? What would they do on board?
A. They could do whatever they wanted. So, you know, they were there to go on a dive to the *Titanic*, on the *Titanic* mission.
Q. Yes, yes.
A. I wasn't on any of the missions. So I don't know, but on the *Titanic*, they were there to go on a dive on the *Titanic* and see the *Titanic*. They -- beyond that, they could do whatever they wanted. They could come work on the sub every day. Nobody did that every day, but they could if they wanted. They could, you know, they could pretend to be a pilot. They could ask to do whatever they wanted to do. Right. So if they wanted to sit and hang out all day in the lounge or whatever, they could. They could do -- they could pull out a lawn chair and hang out on deck all day long if they wanted. Or they could come work with the crew, you know, literally work with us. They could go, you know, if they had any skill at all, they could run a boat, you know, a small dingy or be in the dingy and they may not drive it but they could be in the dingy to go out to fetch the sub and drag it back up. Basically anything they wanted to do, they were not -- it was not out of the question that they were going to do, other than Stockton made the decision who was going to get in the sub and who wasn't going to get in the sub, and then you get to dive. So that would be something that he completely controlled.

But as far as what can I do all day as a mission specialist? You know, if you went to Stockton and said, hey, I want to work on the sub today, he was going to find something -- somebody to hang out with you and show you what to do. So I -- people, people helped pack weights or, you know, do weight related things for the sub. People -- one person welding, learning to weld, you know, like we had a guy that was a -- used to be a welding instructor and he taught some people to weld on the boat. He (indiscernible) and all that. So, you know, but anyways, you get the idea. It's like anything that they wanted to do basically they were allowed to kind of participate in. You know, they could -- well, they wouldn't be a pilot, right, but they could -- Stockton would tell that they could pilot. Certainly they could be trained to be pilots.

Q. Yeah.

A. You know what I mean. I never saw that actually happen, but he would definitely tell everybody they're going to be a pilot and that kind of stuff.

Q. In your, in your opinion, like how did that affect safety? Like allowing -- having other people who weren't necessarily part of your crew, coming in and turn bolts or nuts or weld --

A. Yeah. Yeah, the welding was done on something non-structural or non-sub really.

Q. Yeah.

A. It's like a weight or something else. So not worried about

that one. In general, it didn't happen that much. So it wasn't a huge thing that I thought about a lot. I didn't like it in general. You know, I didn't like it ever. It was like -- you know, I just don't want to try -- I don't want to work in front of all these people. I was like I don't want to be on display, on a stage, having -- it's a whole other -- if you've got to take someone with you. That's a whole other skill set and thing and energy level that you've got to portray. It's like a tour guide. I'm not a tour guide. I'm an engineer and, you know, I'm working on this sub, right. So I didn't see it happen a lot. I mean I did it, and I was only on the *Titanic* mission, but the -- on the *Titanic*, you know, it probably happened, you know, a half a dozen times or something like that. And, you know, somebody would come up every day, if they'd be around, and it was usually a short thing. Oh, we're going to go do this or Stockton would come out with them and he's do "X", you know. And so it didn't affect me a whole lot. So I wasn't super concerned on safety but, you know, we would also not let them do stuff that we were worried about a mistake, you know.

Q. Right.

A. So we wouldn't let them, you know, not that we were -- if we were doing something critical on the sub, they wouldn't be doing it, right. So I didn't like it, but I wasn't hugely concerned that it was a safety problem with a mission specialist.

Q. How would you describe the -- and this is just specifically

speaking to the engineering team for expeditions 2022 and 2023, how would you describe their experience, the ones that were on board for the *Titanic* missions? Two basically performed corrective maintenance actions, preventative maintenance.
A. Well, I wasn't on those trips. So I don't know exactly who was there. I know some names because I know the team, right. I know who quit and Phil quit right before 2023. So I know he wasn't there. I can't, you know, I mean I need to be careful how I answer this because I don't want to say all the things I don't know, right. But from my opinion standpoint, I felt like, you know, okay, an example, I felt like when they let me go, I didn't know that they'd ever make it again because they didn't even know what, they didn't even know what I did, you know, like how much I worked on this thing to make sure it was safe. He had just cable in the locker, right, we put cables in the (indiscernible) and they get slapped against the side of the ship for, you know, days at a time. They'd come apart, you know. If you don't tend them and make sure they all go up and down all the time, right. We had cables like that. And nobody, nobody would do that. They didn't have the experience, right. So they didn't know these things, and you've already learned the hard way or one of your colleagues at Oceaneering had told you, hey, don't do that because this is what's going to happen, right. So my take on it was I didn't know that they'd ever make it again. I didn't actually tell them that, but I considered telling them that when they let me go, but I kept

my mouth shut. And in my personal opinion, again I wasn't there, don't know exactly who was on the boat for everything, so I want to be careful, but my personal opinion was the team degraded. The first year it degraded some, and then additionally it degraded from there worse the final year to the point where they didn't have a lot of staff left. My understanding is that they had gotten rid of, you know, Phil left. Jeff left. I think there was one or two others that left, because what happened at some point, again I wasn't there, (indiscernible) told me this, that Stockton had basically said they needed to -- he asked the team to take no money for like the fourth quarter of 2022. I wasn't there. So this is second hand, but basically asked the team to no money, gave them the option of, you know, take no money and get paid a little interest in February. They're not making a lot of money. They can't -- these aren't people that can afford to like take no money for a quarter. That's something Stockton can do, but not these guys. So everybody said no. I thought they were going to get fired. I thought -- what I had heard was they're -- there was no option. You're taking this or you're getting fired. But anyways, what resulted is about three people left or some people left. So, you know, he's going from a team that, you know, was -- I was really proud of my team, but we weren't like, you know, we had junior-ish people. And, you know, we didn't have any subsea guys except for me. So, you know, I didn't have like the A team from Oceaneering, right. I had a good team, and I was proud of

these guys and they worked hard, and we did it. But, you know, they weren't (indiscernible) to less than -- a lot less than that. They lost their subsea experience guy which was me. You know, people left here and there. Then they went from that to a bunch of people left because Stockton wasn't going to pay or was talking about not paying. And then bringing in whoever they could find. They would just go on the trip basically. So, yeah, I wasn't impressed with that at all.

A similar thing happened on my trip like we had to let a couple of guys go once we got out there, you know, you had a bunch of guys who had never been to see and all of a sudden you send these guys to sea. I told Stockton ahead of time, I can guarantee the whole team won't make it through this. It's not going to happen. Like guys aren't, you know, they have never gone to sea, they'll find out, hey, this isn't as glamorous as it sounded like it was going to be. I'm really tired. I've been working like a dog. I can't go on any more. I'm trapped, and they're not all going to make it. This is just reality, right. So I told him that ahead of time. We got out there and like three guys, you know, within the first 2 weeks, obviously those guys weren't going to make it. And so he told me to send them home. So I sent them off the boat. I think one got fired. Another one just got sent off the boat, something like that.

And I told him, okay, you're going to have to replace those with somebody for me. Well, instead of letting me pick the team

again and getting to go, you know, hey, here's our contractor. I know he should bring him in. He's got subsea experience, whatever, he's a (indiscernible) technician. Out of nowhere I get these two -- no offense to anybody. I'm 50 years old. So, I'm old, too, right. But two old dudes who their only claim to fame as far as I'm concerned is their technical divers. They're totally out of shape. I don't even want anybody diving period. I want help, but I don't want anybody in the water. They're great big heavy guys, and they're, you know, Stockton like -- well, Stockton, like we've got to work every day, and they're not doing anything. They're not even coming out on deck. They're not part of the team, you know. So I gave Stockton a hard time about it. I'm like, why bring these guys out? Well, because they're technical divers and they can dive. I don't even want anybody in the water. That's the last thing, and all they're going to do is that. They're not replacing my guys that were supposed to work with me every day.

So that's my take on what probably happened, which I wasn't there. So, I want to be careful, but like I said, my take on what happened year 2 and worse year 3. More guys that weren't part of his core team and didn't really know what's going on, but they were warm bodies to be there.

Q. So moving forward into -- so October of, October of 2019. The delaminated and the original hull was at the Deep Ocean Test Facility. And, were you involved in that hull?

A. Yes.
Q. Can you tell me a little bit about that and what you found and then go from there?
A. Yeah. Back in time a bit, like a crack was found in the Bahamas. Kenny Haig found the crack. It was his job inspecting things on his own. It was cracked behind the liner where you couldn't really see it. He looked down there with his flashlight and sees a crack and, you know, sounded the alarm. So he did exactly the right thing. So we brought the sub home. Stockton wanted to take it apart, find the crack, you know, inspect it obviously, you know, grind out the crack, whatever, and he wanted to put it back together in 3 weeks and dive it. And, you know, it's like, diving in a hull that's got a huge crack in it, even -- I didn't even want to dive in it at the dock. But he was adamant because he wanted to see -- he wanted the press. He wanted people in public to see that OceanGate was diving so that his story about the boat, ship not coming for *Titanic* [sic] and that's why we couldn't go to the *Titanic* this year again, checked out, you know, like it would give him more credit, you know, the plausibility that Oceaneering -- or sorry, OceanGate's all good, but the ship company bailed out on us at the last minute so we couldn't do anything. That was the story.
Q. Can you indulge on that -- on us when it was.
A. If you bring me back to main point.
Q. Yes.

A. Because I'm going to forget.
Q. I gotcha.
A. Okay. So what happened was we have a boat, a ship from Reach Subsea I think it was, you know, operating some ships. They were on a job in Trinidad for BP, doing some work down there on a ship. We had gone down. I had flown down with Scott Griffith and looked at the ship, inspected it, and we selected that for the *Titanic* trip. And then we found the crack. All of a sudden it's like, oh, you know, we've got problems, right. The ship was supposed to come up in like, I don't remember if it was 1 week, 2 weeks, but it was very soon, you know. It was like less than a month the ship was supposed to come from Trinidad, pick up the sub in the Bahamas and then go up to St. John's. Some of us were going to meet at St. John's. Some of us were going to meet in the Bahamas, because we knew we needed a team to work on it the whole way, you know, to St. John's because we knew it was not going to run. So we're splitting up.

Kenny finds a crack. Bob flies down to the Bahamas to be the man on the ground to see it, and he's looking at it. This was while I was still coming out. I was -- I remember I was in Houston when that happened, right. I wasn't in Everett. I was in Houston trying to move, you know.

So anyways, we eventually shipped the hull and sub back to Everett. We pulled the interior out, and we see this crack that's 4 feet long actually and a third of the way around the hull,

right. I guess we've already seen it because we cut it. We cut the side of the thing out, and we looked at it before it got back, right.

And so then Stockton wanted to -- oh, so we were talking about the ship. So what -- so now, it came like, we're not going to *Titanic*, and Stockton needed an excuse because otherwise, he's not delivering for like the, I don't know if it's the third year now or the fourth year now. It's definitely not -- I believe it was at least 3 years in a row he did not deliver, right. So customers that, you know, one year he told them that it was a lightning strike, you know what I mean, and I had no idea if they actually got hit by lightning. I did talk to the team, and someone said, no, it's more going on than that. Well, I knew from looking at the sub, they were never intending -- a year later, you couldn't do it. So, you know, like I'm for sure there was more going on than that.

So, anyways, they -- Stockton wanted to use this ship thing. He needed the ship thing to not get sued maybe or at least make the company look like we weren't a bunch of fools, right. So he actually said the ship bailed out on us, which is partially true. The ship company -- this ship was coming up not with a Canadian flagship. We're going to go out of a Canadian flag port. When it comes down to this, you guys know the story better than me, but I will tell you what I understand.

There was a worry that because it wasn't a Canadian flag

vessel going out of a Canadian port and the fact that we were coming in and out of that port and not going to some other part of the country, that we needed to use their Canadian flag vessel for that. A Canadian ship we have to work with. So I don't know.

And so there was, you know, there was talk about that, and right before this was happening or as this crack -- I think it was right after we found the crack, they were worried -- the shipping company was worried about this. But either way, it right in the same timeframe.

So now, you know, it's like -- they're like, hey, you know, we can't send this ship up there because we're afraid it's going to get stuck in port, and we're going to get stuck there even if we're, even if we're legal, which we had some kind of letter from the Coast Guard up there or somebody saying, hey, this will be all right. And then they like, even if we're legal and it's no problem, we're going to get stuck in port when someone local complains because we're not Canadian flag. And then, you know, we're going to be stuck there whether it's legal or not. We're going to have to go through the process. And our ship's going to be sequestered in port. You're not going to get to the *Titanic*, and we're going to be paying a ton of money to get through this process. So they basically finally said, we're not sending the ship.

But, they did offer a second ship. It was a ship we already knew about, we had already looked at. We said it wasn't quite

what we wanted but could work. So they offered that. That was in the contract that they had the option to do that. And, you know, basically we just, you know, we're OceanGate. Stockton just said, no, we're not doing that, right. And he needed to say no because we knew we couldn't go. But, you know, he was really upset about that whole thing, and basically -- that became a great scapegoat, right. And so what killed me about it though is he wanted to take it further than just being our scapegoat. I just got out of jail free.

But he said we spent $1 million, that we were already into the ship for a million bucks, just for them to leave and move, you know what I mean. Just to leave their Trinidad thing, we were going to be into them -- we were into them already from -- contractually that was, that was spent money, even though we hadn't paid it yet, but that was spent. So we're going to be in at least a million bucks whether they ever went or not.

And, so in my mind, he's got this gift horse like here's your first excuse for why we're not going. You're getting out of a million dollar contract that we were stuck in, and they're going -- we basically all agreed we'll just walk away, and Stockton started talking about wanting to sue them. And it's like we're having these conversations on the phone where he's amping the volume up with them, like trying to point the finger at them. They understood their side of the problem, you know. They didn't understand we had a crack, and so he's doing that, and I'm just

like what are you doing here? We just got the biggest gift horse we could ever have, and you're trying to cause more trouble. Like, you know, if this continues, they might find out somewhere along the way that we had an issue, and we couldn't actually go and how that's going to play out. So that was the basic thing. At the end of the day, everybody walked away from that contract. And it's just disappeared. That was the ship story. I think that's what you asked.

Q. So, he wanted to dive it prior to the Deep Ocean Testing.

A. Yep. So he wanted to put it back in the water (indiscernible) we're still diving, right.

Q. You're talking about the first hull.

A. First hull, yep.

Q. Roughly just prior to October of 2019.

A. Yeah. So he wanted to dive. We took it all apart. We looked at the crack. We ground out the crack, and now he's wanting to throw it back together. Basically the whole team said no, we're not, we're not getting in it, and we're not going to support you putting anybody in it. So even if you say, fine, you guys can sit, we're not doing it. And then he was really upset about that, about what he was losing. He confided in me a little bit about it, you know, as I wasn't like, you know, you suspect I would have been the front man for that one, but in that case I wasn't. Like somebody else got to it first. Like Kenny I think -- in my opinion, Kenny was like the front man for that because he

was the pilot and he was just like, nope, not getting in it, not supporting you. And then Stockton went and pulled the next person, you know, kind of like, you know, are you going to help me on it? nope, not doing it. It was pretty good, to be honest.

So basically nobody would support him. He confided in me that he was really pissed, wants to fire everybody essentially but basically what he said was when he -- when his wife told him to use it as a, you know, as a building thing for getting some -- not morale but, you know, kind of like showing that he can make a great decision. So basically eventually he kind of walked away from the whole thing.

And so he didn't -- they did dive at the dock one day which I still wouldn't have done because if the thing leaks, you can't get or out of that thing quickly. But, you know, so a 3 feet deep kind of thing.

But basically, some -- everybody said no, and that's what ended it, and so we didn't dive it again.

Q. And then the sub goes to the Deep Ocean Test Facility and it fails. How does it fail? Can you explain to me how that works and what -- how you -- I use the term fail because I don't speak --

A. It was a test basically. All right. So we take it to the water test facility. First, we take, we take all the interior out. We instrument it up with the AE system which was already there but, you know, we put new sensors on it and all that kind of

stuff because some of the sensors fell off at some point, probably during the disassembly or whatever. So we put it, you know, a new AE system or take the AE system and put it in and we redo all the strain gauges and acoustic microphones, put them all in the sub. Somewhere there's a drawing of exactly where we put them. And, we take it to the test facility. We plumb -- when you take it to the test facility, like they have a massive hyperbaric chamber. It's like one of only two in the world I think that that's big. The other one's in Russia. So, you can put the entire hull in there.

So we instrument it up with the AE and strains. So we've got two things there and then the third thing we had is we filled the entire with water and then we have a tube going from inside the hull to outside the hull to a water atmosphere. So that still keeps the interior at one atmosphere but if you would implode it, you wouldn't have a massive bang that might blow the facility or something out. That's probably wrong but you get the idea.

Q. Yeah.

A. You'd have a much smaller bang because there's a lot less compressed gas, right. And then, and then the other thing is you can measure the displacement of the actual hull, right. Because the hull's going to squeeze as it goes down, and as it squeezes, water's going to come out into a bucket. And then as it uncompresses, when you bring it back to atmosphere, it sucks that water back in. So we can measure displacement that way. So what we did -- we put it -- we took it there and stuck it in this

pressure chamber. It was big enough that the whole hull -- we didn't have all the peripherals, but the hull itself, put the hull in there, and we took it down, you know, we stepped down. That's basically, you know, I don't remember what the steps where, but again this is all documented somewhere. And we stepped down depths, and we went I want to say into the 2,000 meter range. I might be wrong. The AE hits. So acoustic emissions. So the noise, the hull is physically making noise. We knew from the guys in the sub on that last dive that they could hear the noise but, you know, acoustics systems could (indiscernible) on that.

So it's ready to stream, what we call hits, events, you know, energy, acoustic noise all over the place, you know, say off the chart. I have no idea what the chart coming through was at the moment, you know what I mean. But, you know, large hits. And then our strain gauges, so when you see the strain gauges on a hull as it goes down, the strain, you know, it starts out, you know, if you're measuring strain versus time, you're going to start out at zero basically or almost nothing, right. And then as you ramp up in depth, you're going to see the strain come up, right, and it's linear. It's a linear relationship. The strain goes umm (ph.). You go to 1,000 meters, the strain's going to go (indiscernible), and then it's going to -- if you sit there, it's just going to flatten out. So we had, I don't know, 8, 10 strain gauges on this thing in different places. So you see all those strain gauges all in parallel go (indiscernible), you know, at

every depth, right. And you see all these AE hits.

You know, the AE hits tell you that some -- that this thing is cracking and breaking. Something's making noise, right. That's what it's basically telling you. You don't know exactly what or anything. Well, you don't know exactly it was but it was the hull somewhere.

So -- but the strain gauges tell you, you know, in this spot, this how much strain it is. So when you two strain gauges that are right next to each other separating, you know, one's picking up more and you're not changing depth, you're just flat, one's picking more strain and one's reducing strain, you know, the strain is going from this fiber little area to this fiber area, and you know it's going to come apart.

So between all the noise and the strain going non-linear, like this thing's about to come apart. Again, it was imminent. And we know this from past tests of third scale models. We -- so before I was there, they built a third scale model and they tested it and imploded it. And they I think the strain system on it.

When I was there, we built two third scale models. One we imploded it. The next one, we could tell it was about to implode by these same methods, strain and AE, and we were able to back it off and just say, oh, okay. Stop going down in depth. Reduce the depth. The AE starts coming down, you know, and we eventually take it out of the tank. But, we didn't actually implode it. So that's how we know basically, strain and the AE are the big things

and we could tell this thing was about to come apart in the area of the sensors.

Q. So at that point, the carbon fiber -- the original carbon fiber hull of the *Titan* is considered failed. What are the next steps? What's happening? What goes on now? So you're part of the company. You're kind of leading engineering efforts. What are Mr. Rush's instructions to you moving forward?

A. Let's build a new, let's build a new sub, right, because he still wants to go to the *Titanic* and keep the business going, all that. So, you know, it's like, hey, we're going to build a new sub. He initially said we're building two new subs, right. I feel like it was a publicity stunt, but I'm like how is he going to build two subs when he couldn't even get one sub built, but okay, whatever. Building two subs.

So I went to my boss at the time who was Bob Shuman, and I said, hey, since we're building two subs, can one of them be titanium, something besides carbon because you have, you know, one -- you guys built one hull and it failed. You've never -- you haven't even got any dives out of it really. You know, a cool idea, Stockton, great, but you don't know if that's going to happen on the next one. And so like let's build on per industry standards that we can basically be sure it's going to function. Yeah, we'll test it but, you know, to build an Alvin sub, you don't know if it's going to work, right.

So, anyways -- Bob told me no, we can't do that. Stockton

has -- and I said, why? We're building two. Why not build one that we are absolutely sure that the design is going to long-term be viable. Stockton has zero interest in anything but carbon fiber. Anything Stockton ever does is going to be carbon fiber, and that's just the way it is, end of discussion.

So I mean that kind of -- that was the first day I realized like a company -- like this is not a -- I want to say this is not a company that's trying to make a business. This is a company that's serving Stockton's desire to be different in the industry, and show everybody he can do something that they said he can't do.

All right. So the next thing was we're going to build two subs. So I just, you know, that means I'm going to be stuck with carbon fiber now, and also because we already have domes and segments, the end caps and the segments and those are titanium pieces that cost a fortune and were already built like you have to use those. I have no choice but to use the domes, segments, penetrators, basically the viewport. The only thing I really get to do is work on the hull because we don't have a hull that works no more, right. So, those other things were givens. Like this is what you have to use. So what my goal was, was to just like do the best I could with the constraints I've got and bring in as much engineering rigor, make sure you test everything the best we can, build a safe sub, but it was going to be carbon fiber. It was going to use those domes. It was going to use those segments. It was going to use those penetrators.

Q. Had you ever had any conversations with Mr. Rush regard like regulatory oversight or regulatory standards?
A. Yeah. Stockton was completely against industry standards in general. You know, he didn't -- he just didn't like any of that stuff. He thought, you know, he would use the term belts and suspenders. That's all belts and suspenders. That's what industry does. So there's another epiphany day I had early on was, when I first started arguing with Stockton because basically we argued about every design. My team would design up something. We'd present it. He'd say, no, that's over designed. I can give you a way cheaper and, you know, like I said before, sometimes I'd win. Often I wouldn't, right. So when he -- I don't remember what the question --

UNIDENTIFIED SPEAKER: He asked you about the discussions with Stockton about regulatory.

MR. SCOVILLE: Yeah. So, that -- so one of the epiphanies I had was that when -- whenever I would use -- Bob told me this. Whenever I would use in my arguments, well, this is what industry would do, this is industry standard, he said, Dan, you're sinking your argument. You're never going to win an argument that way with Stockton because Stockton hates industry, and he doesn't want to do anything like industry. He wants to do it completely outside the industry way. That's another one of those epiphany moments, like oh, crap. You know, this is not -- this is hard, you know, like how am I going to deal with this.

So, back to the regulatory conversation, that was the undertone. Didn't want to do any regulatory. Thought it was belts and suspenders. He couldn't get *Titan*, like a COI *Titan* anyways because it didn't meet any of the Coast Guard kind of like directional things, right. Like I remember a couple of stupid ones. They're like the passenger compartment has to be separated from the pilot compartment, right. That's one of them if I remember. There has to be a certain amount of free board. It has to be a hatch or something and railings and stuff like that, right. This was outside of Stockton's vision for OceanGate and the sub, right. He had a vision of what the sub was going to look like. Let's say it's like the happy sperm. That's what he -- that's what the vision was, like this little thing with a, you know, this thing with a tail. That's what we called it once or twice. That wasn't talked about a lot, but that was basically the vision. And we worked this vision through several iterations and he had this -- this is what it -- this is what an OceanGate sub looks like. That's what (indiscernible), right.

So, again, we weren't going to get a COI because we didn't meet any of the standards. As far as ABS and that sort of stuff, he just had no interest. And the other -- you know, one, he didn't have an interest. Two, it was like he didn't, he didn't want to educate them. They didn't have any carbon fiber soft (ph.) hull standard. So to kind of fair a little bit here. It's like -- well, they didn't have a standard to measure by. You

couldn't take all the other standards and try to apply them. You could have educated them on what you were doing and they come up with a standard and work with them, but again, he was -- he felt like -- my opinion is he felt like he was educating them and why would he do that and (indiscernible).

If you watch any of the media, a lot of wrong in my opinion. They're off, but one thing that you can't deny is Stockton was proud of it, and he was there in the front saying, yeah, we don't need that stuff.

BY LCDR [redacted]

Q. What did he believe? If you had a conversation with him and what do you believe that he believed was the advantage of carbon fiber? Why only carbon fiber?

A. So I believe it was because it was different from all of industry and that he wanted to make his mark on industry. People told him he couldn't do it. He was going to prove them wrong. That was the main thing. He would also talk about strength of buoyancy ratio. That was a bogus ratio that he made up. I've never heard of it before coming to OceanGate. I just, you know, it sounded good in a presentation. Well, it's not strength to weight. You want strength to buoyancy. That's almost the same thing, right, but -- so he would make an argument that strength -- proper strength to buoyancy, has a better ratio and he talked about that.

You know, my opinion is that he would make an argument about

it's more available. You can take carbon fiber off the shelf basically in all kinds of varieties, and it's readily available basically. Whereas, titanium is not readily available, you know, especially like I think the science (ph.) grade 5. So that is not readily available, and it's ultra expensive. So it will be a cost argument. It will be a strength to buoyancy argument. It will be an availability argument, but ultimately it's he was going to show industry he could do it.

Q. So now, we're building the second -- this is not, we. We're building the second. You already stated that you're going to reuse the titanium fabrication and end caps and the rings.

A. Yeah, I had no choice. I had to use those because they were already built, you know, hundreds of thousands of dollars worth of stuff, and he was building the same stuff, shape-wise at least.

Q. Okay. And then the carbon fiber was going to be wound by electrode method. What is the relationship with Electroimpact in OceanGate?

A. So, no relationship that I know of prior to that. We started out with NASA. We were going to have them build the third scale hull. I don't remember what the act is called, but there's like some industry act where NASA can help with industry projects, and we had signed up or applied for that. And they were interested because we were doing something never done, you know, it's a thick laminate. And so they were just interested. So we basically got that build done, a signed kind of thing, and they were going to

build our third scale hull. COVID happened, and potentially the full size but as far as I know, they had never signed off officially they were going to do the manned sub, you know. They were definitely wanting to do the third scale. They were definitely very interested in the project. Just from a legal standpoint, I don't think their legal had signed off at least to my memory, they had not signed off that they were actually do that. So.

So what happens? COVID came along, and NASA shut down. When NASA shut down, they just weren't going to open up any time soon that was going to fit the OceanGate timeline. So we had to basically come up with a plan B, and NASA's the one, as far as I know, that suggested us to go to use Electroimpact. Basically the machine NASA was going to use would lay out the carbon fiber. That was Electroimpact that manufactured that machine. It's called AFP, advance fiber placement machine, right. As far as I know, that's the most high tech way to build carbon, anything carbon fiber in the world as far as I know.

And so, they just said, hey, we're not going to open back up but there's the guys you should talk to. They connected us with the guy -- the right guys at Electroimpact. It just happened that Electroimpact was 20 minutes down the road which was total luck. You know, NASA was mid US. I don't remember what state we were going to and we're in Everett, right. So, you know, that was going to be a lot of travel back and forth and cost, but randomly,

you know, these guys were right next to us.

So, we went over there. We met their team. They were interested. I (indiscernible) or something, and they actually gave us a quote that we executed.

Q. And then -- so with regard -- or with Electroimpact, the -- I believe that the carbon fiber composite was from Toray Composites.

A. Yeah.

Q. Did -- why did you go with -- did you -- were you the one who made the decision on what type of carbon fiber to go to and why did you decide that?

A. No, Bob and Stockton basically decided on the carbon fiber. I was not a carbon fiber expert, didn't even really want to do a carbon fiber hull. We had to do it. So, you know, I was there to support as best I could, but Stockton felt like he was the expert at carbon fiber, and there was definitely nobody there that could argue with him. So, him and Bob basically kind of took that part on, right. It was -- I did feel like it was a divide and conquer kind of thing, you know, like I had the entire sub kind of to do, and I was going to be a part of all that stuff, but I felt like Bob and Stockton did, you know, they selected the carbon. Bob did most of the talking as far as I know with the carbon manufacturers. He talked to 3M. He talked to -- and it's not like I never did or never said anything in these meetings, but basically Bob and Stockton made the decision about the carbon fiber. I know there were costs. You know, I know cost

comparisons came into it. I know that, you know, material properties came into it. I believe NASA tested a new resin system from 3M, you know, while we were still contracted to them before COVID stuff happened. And they were -- they had made up some cubes of it basically. They were testing it on a pressure kind of gauge setup, you know, meter thing, and they gave us some results and they did some microscope stuff for it and we ultimately didn't use that carbon fiber resin system, but it was supposed to have some great properties (indiscernible).

So those guys really chose the actual carbon. They, you know, they picked Toray for it. Probably price helped a little bit in the end and material properties.

Q. And then with relationships, Toray provides the carbon fiber to Electroimpact. Electroimpact creates the pressure hull. And then from there, what's the relationship with Janicki -- Janicki, sorry.

A. Janicki, they do carbon fiber layouts and I believe they do -- the lead has been for the curing. So Electroimpact was never able to cure the size of the hull. They didn't want to do any of the curing. They didn't even cure our third scale. And so they did the lay up and then the hull was cured by Janicki. So Janicki would do the bagging like before you cure, you vacuum bagged it, and there's a whole process that the expert use and skill set around that. And so they bagged it, and then they would cure it.

And then the other thing they did for us was machine. So

they had a machine cell that was as big as this room that we could put the whole hull in and then they cut off the ends for us, the tapers on the ends where you laid up. They've got this big cylinder that you want but the ends are all tapered down, right, because you've got to support that, the next layer on top. So each layer would thin a little. So you get this big ramp, and then your parts and all that. So, you know, it was a specialized process to cut off the ends of that and get down to the actual size hull. And they had this massive CNC machine. And, you know, they had the technical expertise to basically do that for us. So that's what they did.

Q. And at this point -- I'm sorry. Go ahead.

A. One more piece of information.

Q. Yeah.

A. Janicki sat in lots of meetings about carbon fiber, cure, resin, all these things. So Janicki, Electroimpact, NASA, Toray, HyperSizer, all these people worked together. Like this wasn't just like OceanGate only talked to these guys about this thing and only talked to those guys about this thing. We had all these experts, not always on the same call all the time, but several times, lots of times. All these experts from all these companies able to weigh in on this thing and help us get to the right place, right. So you've got experts across industry and the NASA guys. So even after they didn't -- we didn't do a contract with them, they were interested in this big, heavy laminate, you know, this

big, thick laminate. And so they would sit in on our calls and, you know, we weren't contracted at that point. They were just interested. So we had their expertise in a third party kind of way as a favor basically, you know, just so they could -- they wanted, they wanted to know what was going on. They wanted to see how it turned out, right. So we had a lot of different groups weighing on this hull.

Q. Did they know what the purpose of the hull was for?

A. Oh, yeah. Definitely. They all knew about the mission.

Q. And people were excited about it.

A. Yeah, it was an exciting mission, right. They worked on the hull to go to the *Titanic*. Oh, wow. Cool.

Q. Did they know that the previous hull had failed?

A. Probably not. I don't know for sure if they knew. Well, in some cases, my guess would be yes, and in other cases I'm not for sure, right. Like I don't know how to answer that really. I'll put it in thoughts to you, but my guess would be yes and no depending on who it was and how much they helped, you know. Because we're going to -- we're trying to avoid what happened in the past, right. You know, it's a big difference between how they built the hull, the first hull and how the second was built. It was built with two totally different manufacturing processes, right. The first one wound -- what do they call it? I can't remember the name. There's a name to the process, but it's wound on a bobbin and the stuff comes off the reel and the trunk winds

around in a pattern. And then they physically hand put layers in the middle. Like they just lay down layers and, you know, with paint brushes and then they got to the next layer like this and they laid it down that way with a machine, with the machine, you know, not an automated machine, but like, you know, level winding system with a spool did a bath of carbon fiber. Filament winding. It's called filament winding.

So we -- how they did it then and how we did it now, was wholly different, much more controlled like -- the one thing is that the resin just goes through -- the carbon just goes through the back, and the stuff is on there. If the back runs dry, if someone's not there to watch it and say, hey, the back just went low, you've got a bunch of dry carbon. You know, that was one of my opinions about what might have happened to that hull, you know, and it's totally different.

So anyways, this is laid up all of that equipment, in the highest, you know, technology way that we understood existed with pre-praying (ph.). It's all very well controlled, pre-pray type of item.

Q. At any point, once the hull itself, prior to the rings and the end caps being installed, was there any discussion of doing NDT of that hull?

A. Yeah. So I wanted to do NDT because I didn't want to receive -- I didn't want a bad hull, but I wanted to know that as soon as possible because I don't want to invest, you know, all the labor

it takes to go -- well, the cost, the money to machine it and, you know, you've got to cut off the ends once it's done, and then you've got to glue on the end caps, you know, or glue on the segments, and then bolt on the end caps. Put it on its feet. It's a lot. I mean it's -- you're talking a month of messing around, labor and a lot of costs, right.

So if you don't do a NDT before that, and you know you have a good hull coming off the manufacturing line basically, then you invest all that cost before you find out just into a bad hull potentially, right. So, my real push was run it up to (indiscernible). I want to know now. I actually want to know before they, you know, they delivered it, before I pay. So I eventually did, Electroimpact or somebody like that, signed up, here's your, you know, here's spec. It's this tall, and oh, by the way, we're going to test it this way before it leaves the factory and if it passes, I pay it, and if it don't pass, I don't pay, right. You're going to build me a good hull. Good. So that was discussed. Mostly it was turned down. Stockton didn't really want to do that, but to be fair, we didn't have a good way to do it.

So -- and then post the hull being built, I was still trying to push this or during the process of, you know, assembling, I was still trying to push for this. Eventually I got permission to go do something. So I had, I had a NDT background, not -- I don't have any (indiscernible). I think I took one class, right. I'm

not an NDT certed guy, right, but I took the NDT UT class, and I ran a group globally that did subsea NDT. So I had a basic clue how it all works, right.

And so what I did, and I have contacts which is the more important thing. So I called up one of my Houston guys who was one of the top BP NDT guys, doing NDT his whole career, 30 plus years, and I said, hey, I've got this piece of carbon fiber, and I took one of the end cuts. And I said, I've got this part of the fiber. Can I send it to you and can you figure out a method to work on this thing? And so he did. We hired him. A contract. He has contracting business. Now, he's retired and does that full time. So I sent it to him, and he is a level 3 (indiscernible), I don't know, four or five things maybe, you know, white knuckle grease on top, NDT guys, right. And he took it to his buddies at some company and they tested it with all the NDT methods that he kind of come up with that, you know, they didn't test every method because, you know, some methods won't work. So he tested it with two or three different methods and basically came back and said, Dan, there's nothing they can to.

So we had our answer basically. There was nothing. We did the same with Mistross (ph.). I sent a second of the hull to Mistross and said, hey, can you do some kind of NDT on this? I know if I left it wide open or told them, what NDT to do, the bottom line, they came back and said, can't do anything. Can't see through it. I think they tried deep sea, but same thing.

Can't do it.

So as far as I know, there's no NDT method that shoots through this 5 inch thick laminate carbon and gives us any data. So then the real testing becomes, you know, pressure test it. That's the final test. Will it hold pressure?

Q. Okay. So, sorry. This is kind of a step-by-step thing. We're going through here.

A. Of course.

Q. So, now we have the -- how did, how did you prep the Tifab (ph.) end cap? How did prep the rings when they were taken off of the old hull? What was that process to take the rings off the old hull to prep to put onto the new hull?

A. Okay. They cut the rings off the old hull with a saw of some sort. It's hard to do because carbon fiber kind of melts and gums everything up and whatever. Put the valve on, cut the rings off. I'm not 100 percent sure but I think we cut them off internally with some kind of saw, like we didn't send it out to a third party, but bottom line, the rings were cut off. The rings had a chunk of carbon fiber sticking out of them, right, because, you know, they're like a clevis style thing, right, the carbon goes in, right.

So, then they were taken to a company called Everett Engineering I believe. They're right down the road, right down the road from OceanGate. There, I don't know what else they do, but they have a large -- they have some large machine, you know,

and they're not like a high tech machine job. They're like, I don't know, a lot of manual stuff, heat stuff, but a lot of manual. Maybe they have a CNC, but I saw a lot of things. But they got some huge ones where a dude sits in a chair way up there. It's crazy.

So anyway, we took it to there, and they put it on a rotary -- a rotor -- a flat mill. It's not a horizontal mill, but a -- maybe it's a -- I'm trying to remember what the machine is called, but basically it was a lathe, not a mill, I think. Some lathe that was horizontal, like didn't start spinning something like this, but spun something like this. Okay. But it's a big spinning, you know, chuck. They put the ring on the chuck and then we -- then they would come over with a bit, a lathe bit essentially, right. It was stationary, and that's why I'm calling it a lathe, but the bit was stationary and the table was moving. And then they'd come over and they basically faced through it. So they tried to chip away and not touch the titanium at first and that wasn't really working. And so eventually I think maybe they asked me can I spin the titanium. I said, yeah, go ahead and spin it. So they spinned it, you know, just barely, a couple thou or something like that, cleaned it all up. They spun both of them.

And then they shipped that over I believe to a sandblaster, you know, de-blaster, to make it uniform and pretty, you know, like, you know when you de-blast it kind of cleans it all up and makes a very uniform surface, right.

And so one of the things that might come up about that is like did we contaminate the surface with that. We they spot weld. We paid for them to spot weld all the media (ph.), so that when they blasted it, he wouldn't contaminate the media if they blasted and the carbon had a bunch of rust/paint/whatever.

So then we had a nice clean surface on both rings, and that's -- that was the first prep. The second prep, it's like when we're about to glue it. Now, it's like now the surface level contaminants, right. We're just making sure that they're really ready for the glue. So we had a process that we built for that. We used what's called a contact angle tool. Basically, it's this tool we rented, and we got this with the help of the other experts, you know, we asked about how do you glue to keep things together.

So, they said you need to use this contact angle, and it basically tells you how clean your surface is by -- it spits a drop of water basically on the surface and depending on how much that drop spreads out, you can tell how clean the surface is. They also call it a water break test, the one that's in -- like if you're doing it non-technical and just put water on something, they call it a water break test, and you kind of understand it basically from there without a number, right.

But if you want a number, you can use this contact angle meter, and it measures what the angle is of how much that thing spreads out. So we rented one of those tools. We talked -- I

talked to glue manufacturers about prep, that sort of thing. How would you prep it? They recommended a bunch of chemicals, and wiping methods and wipes and scented -- or that sort of stuff, and I got all that stuff for the procedure, and then we kind of tested through that. With the contact angle, we tested different chemicals to see which ones would help us get the lowest contact angles. We measured everything with contact angle, and then we, you know, eventually did that whole process on each ring. And then we glued.

Q. Can you just give me the set up? Is it vertical? Not like --

A. Oh, yeah.

Q. How are we -- or is it horizontal?

A. So cleaning the rings was -- they were, you know, laying on the ground on some dunnage, right, to get them up off the ground a little probably, but basically sitting on the ground and we needed the clevis (indiscernible), and we were cleaning that way. And you kind of asked how we glued it together.

Q. Yeah.

A. Okay. So then once that was clean and we had good contact angles on that and on the hull, the hull was flat initially, but we were also cleaning the hull surfaces, right, the two ends which had been machined prior. We then -- we did contact angle on all that, on all of the hull and all of this, and when you're satisfied we (indiscernible). We took the glue and mixed it up,

part kind of stuff. We mixed it all us, and we ladled it in there basically with a trowel, like a little spatula type things, you know, whatever. We put it on there and we put a lot of extra so that -- because, you know, you get one shot at this, and if you don't have enough glue, you're hosed, right. So you put a lot of extra glue. Covered all surfaces with glue. There was some spacing that the experts had told me that we needed to maintain between like -- we weren't supposed to let the glue completely squish out basically, right. So we put little circles of something down in the glue to hold the hull from squishing all the glue right down to the bottom, right. And then same with the sides to keep it all kind of centered in the groove because it was a little bit of space and then, you know, it's 20/1000ths or 30/1000ths. But leave a little bit of space. So we put these little plastic pieces that you could kind of pull out once it was kind of centered up and bound. So before you'd kind of leave it all the way down, you'd pull those out. So that's what we did.

We glued up all the surfaces, lifted the hull vertical. For the first one, the ring was down and we lowered the hull down onto the ring, pulled out all the little plastic pieces and all, you know, rested down with it. So the weight squished out a lot of glue, cleaned all the glue, you know, excess glue from inside and outside.

And then we did the same process with the other ring, but we decided to put the ring down. This one's already built, sitting

on top of the ring that's being glued, right. It's probably a day later or something, maybe the same day. I don't remember. And so this one, we picked up and did this one, and we did all the same surface prep, put all the glue on both surfaces. We then stuck the ring on top of the hull on the second one instead of the hull on top of the ring.

Q. Which one was first?

A. I (indiscernible).

Q. Yeah. What I'm asking you is was it the end cap which was where the hull was placed on top of the end cap and then was the front cap placed on top of --

A. I don't remember if it was front or back, on the aft or forward.

Q. Exactly.

A. I don't know which --

Q. Okay.

A. -- because they look basically the same or very similar. You can -- and by end caps, I mean they call them segments. Like we're talking rings. We're talking these rings, right.

Q. Right.

A. Not the domes.

Q. Correct.

A. Okay. So we're all on the same page. I don't remember which one was done first but the first -- I don't remember if it was aft or forward, but what I do remember is the first ring was done

down, the hull was placed on top. The second ring was over here, and placed on top. Then we placed a whole bunch of weight. I don't know. We measured it, but I don't remember if it was 1,000 pounds, 2,000 pounds, but something in the thousands left on top of it all and then it sat for 5 days.

Q. Do you know why -- how you determined what weight to put on top? Was it --

A. I don't remember.

Q. Okay.

A. When we put the weight on top, glue came out the top again all the way around. We cleaned it all up.

Q. And then what was the cure time before it was splashed or made wet at one point?

A. Weeks, maybe months. I don't remember the exact dates, but you can figure out some dates --

Q. Sure.

A. -- specifically but, the -- so all that's part of the (indiscernible). We've got some dates and some stuff you might have from OceanGate stuff, but I don't remember, but it would have been -- the first time it got wet would have been (indiscernible), right. So basically the process was bring it -- we brought it all back to -- it sat for 5 days. There was -- I remember this because Stockton didn't want to leave it for 5 days, and I was like why would you take any risk now. The hull's built. We've spent the money. We've put it together. But eventually until we

fought about that, and eventually he allowed it.

So we -- the next thing we did was take it back to the shop, got it horizontal. It was already -- no, we did -- before we took it back to the shop, we put it on its legs. So all that was done at Electroimpact. We rented this space at Electroimpact. We put it on its legs, we put the domes on it. We shipped it back to the hull -- or back to office.

Q. Okay.

A. From there, it was basically like we've got to get the AE system in it, the strain system, and anything else that, you know, needed to be on it, like some, you know, any penetrators, the holes and there's four holes in the ring, right. The penetrators go inside and outside electrically. So that has to be all plugged off or planned. We planned for all that stuff, right. So we did all that, got it all set up to go to the DOTF, and we shipped it out. So we got on the road, and I don't remember the time in it would take, but I would guess 2 weeks to a month in between.

Q. Sure.

A. The timeline was always tight. So we worked moving, you know. We didn't have any time to sit around. We were trying to build it.

Q. Yeah.

A. We basically had a vessel date, right. If we didn't make the vessel date, Stockton's story was we were going out of business. They hadn't made the vessel any other year. So it was a big push

to make the vessel obviously. Like the first time we're going to (indiscernible).

LCDR [redacted] Okay. It's now 12 o'clock, and we're at a good stopping point. We're going to go ahead and take 1 hour. So we will reconvene at 1300 Central Standard Time. If anybody has any issues moving forward with regards to the stop, if you need to jump in and ask questions, please give me a call or send me a text, and we'll get it figured out. We'll go ahead and stop recording, and break for an hour until 1300 Central Standard Time.

(Off the record at 12 noon CST.)

(On the record.)

LCDR [redacted] Okay. Due to some of the individuals who were on the line, they have stops during the East Coast Time in other meetings or whatnot. So I'm going to go ahead and I am going to turn it over to Mr. [redacted] Mr. [redacted] can you please turn on your video/audio and ask your questions.

MR. [redacted] Yes. Thank you. [redacted]

BY MR. [redacted]

Q. Dan, the -- I'm curious about acrylic window on the submarine, the care and feeding (ph.) of it, but not only that, how many spare acrylic windows does -- did OceanGate have?

A. When I got to OceanGate, they only had one acrylic window, no spares. And then while *Titan I* was, you know, disabled or decommissioned essentially, right, and we're building *Titan II*, some of the technicians were moving that window around the shop,

you know, just in a normal routine, kind of like, hey, we're moving some stuff around because it obviously wasn't assembled in the *Titan II* at that point. So they're moving it, and they dropped it. And so they cracked -- they put a couple of small chips in the outer ring of it. I wouldn't say cracks, just chips, small chips. Again, I took pictures of these things. You guys might access to through OceanGate. I don't know.

The -- Stockton looked at it, you know. We looked at the PBHO Manual, right, for guidelines on that kind of stuff, but basically we didn't, we didn't reuse it. Stockton's feeling was it's fine, but, okay, fine. And we bought a new one essentially. So we ended up with really no spares, right, but we had this second one that was intact except for some small chips that Stockton wasn't too worried about. But, to the best of my knowledge, while I was there at least, it did not get reused. We used the brand new one, and I don't know what happened after I left the company as far as that window, that spare window that had chips.

Q. Okay. Were you involved in the purchasing and fabrication of the new window, the replacement window? If so, who made that and was that stamp with PBHO markings?

A. Okay. So before I got there, they had obviously had a window, right. The purchased it from a place that makes those, you know, subsea windows. I can't remember what the name of the company is. After I got there, when we purchased the second one,

they purchased from the same company again. I don't remember whose name is on the purchase order. I wasn't oblivious that this was happening or anything, but Stockton made the final decision to purchase one, right. The team wanted to purchase another one because we wanted to have one that had no cracks in it -- or sorry. Cracks is the wrong word. Chips. They were not really cracks. They small chips in the corner, you know, around it. We didn't want that. And so it was kind of a -- it was one of those battles I fought to try to say, hey, we need, we need something different. Initially I was losing that battle, but at some point, Stockton said, yes, go ahead. I don't think I pulled the trigger personally on ordering it, but I was certainly aware that it was happening, and I think one of the -- I think Kenny actually bought it because he had the relationship with the company from the past window, right, something like that or past work experience.

Q. Okay. When you were doing the repairs and you mentioned the end bells and, you know, setting them up on ends and putting them on caps and gluing, where was the acrylic window at that time?

A. It would have been back at the main Everett shop. When we were -- when we did the gluing and stuff, we did that at a facility in Mukilteo that was owned by Electroimpact because they had a large crane, and we needed a good crane to do all this assembly. So we rented a small facility there. We did all that gluing and hull assembly there, and then, you know, we brought it back to the shop, but bottom line to your question, that viewport,

I don't think it was brought to -- I don't think that viewport was ever brought to the Mukilteo facility. We did put the hull, the pressure hull together there, but I don't believe we ever put the viewport in. I don't remember 100 percent, but I'm sure there's notes at OceanGate somewhere that you could figure that out for sure. But I believe it's always been in the shop at Everett unless we were on an expedition with, you know, there would have been a *Titanic* expedition, right, that spare, or the viewport would have been installed. The spare probably would have gone with us, using spare in quotes.

Q. Do you have any idea how it was stored in the shop?

A. It was stored in a Pelican box with a bunch of padding. So they had like a 16x50 sized pelican box case, and it had I believe a bunch of Pick N Pluck foam in it, right, that had come with Pelican boxes that style. And it was stored in that Pelican case.

Q. Protected from temperature?

A. Protected from impacts mostly I would say or getting kicked around the shop. It was stored indoors for the most part. So I wasn't really thinking about temperature in that case. I was more thinking about impact, scratches, you know, dust, stuff like that.

Q. Would you say the shop was climate controlled?

A. Okay. Yeah. When -- were you there when they put the hinges on the rings for the end caps?

A. So, the front end cap you mean or --

Q. Yes.

A. Yeah. So again, this is something that was, you know, predated me. The old team had built hinges for the dome and, yeah. And, you know, the hinges were a struggle just to give you kind of background information. The hinge couldn't support the dome. So you couldn't like just unbolt the dome and swing it open, right, like and that's how they entered and exited the sub which I absolutely hated. I didn't like it because you bolted people in there. And I just never felt comfortable with -- that we bolted people into a sub. Stockton's response to that argument was always, well, they bolt people into the space shuttle, you know. Stockton's background was aviation. So he compared everything to what they do in aviation, and so that was where a lot of his, you know, kind of thinking arrived. So he compared it to the shuttle. But in my view, you couldn't get people in and out of it fast, and it was a real struggle. I didn't like it at all. It didn't meet the Coast Guard, you know, COI thing that we talked about earlier. So we couldn't never get a COI. And so, yeah, didn't like it.

But, bottom line is I was there when I -- I believe I was there when we put the dome onto *Titan II*, the second hull, right and bolted that onto the segment. I was -- so, yeah, I think I was probably.

Q. Again, I was just curious. When -- just to share what my line of thinking is, is when they put the hinges on, were those welded on or were they bolted on? Did they do any drilling? And

how would that heat have affected the carbon fiber? As you noted earlier, temperature would basically turn it to putty.

A. Okay. So the hinges were bolted on -- is that what you're -- they were bolted on. I think that's what you asked me.

Q. Yes.

A. Okay. So we bolt -- they were all bolted on. Again, they couldn't hold the weight of the dome. So any time the dome was opened and closed, we had to use what they called a dome dolly. This is something that also predated my time there. They supported the dome weight under the dome, what they call the foot, which was basically like a, you know, flat spot on the bottom of the dome. They supported that with the dome dolly, and then there was this like, you know, shimmying of the dome and the dolly to open the dome, right, because you couldn't get -- if you got the dolly ahead of the come, you'd bind up and if you got the dome ahead of the dolly, you could bind up. You know, if the dolly fell off, the thing was all going to sheer and come apart, you know, the hinge would shear or the bolts would shear, right. So the hinges were made -- again, this is something that predates me, but the hinges were made by -- they were made for safes, right. They're made for heavy doors, but this thing was 3,000 pounds. This front dome was a 3,000 pound dome. So they could not -- a single hinge couldn't support it.

At one point, my team and I made a design for a hinge mechanism that could support the dome weight, but Stockton said,

no. So that never went anywhere. But those designs would be the CAD system if you want to go find them.

So back to your question about temperature. You know, I'm not sure, I'm not sure where you're coming from on the temperature thing because, you know, like I'm not seeing that any temperature changes were generated by opening and closing the dome that would be anywhere in the range of making anything worried where you've got. You've just got a hinge, right, and you've got a supported dome and your shimmying very slowly because you can't really do anything fast. This dome and this dolly and the hinge is coming along with it. So I'm confused about the temperature piece. Sorry.

Q. No, I was asking about when they, when they drilled actually to put the hinges on.

A. Okay. Now, pre-machined.

Q. All pre-machined. Okay.

A. Yeah, like pre-machined and pre-dated me. Like that was all machined into the brains and the dome prior to, you know, my coming on in *Titan I.* So that was all stuff that I had to reuse because we already had it and had already paid for it and we were building the same kind of sub, right.

Q. Yeah.

A. Yeah, all pre-machined and no drilling.

Q. And when they were moving the dome, opening and closing, and you mentioned that, you know, it was a kind of move a little here,

push a little there type of thing. What kind of torques were being put on the rings?

A. It shouldn't be a lot of torque, right, because you -- so you're moving it all by hand in general, right. You -- they did occasionally use like an impact gun or an electric drill to move the dolly. Am I right about that? No. No, they used to move the dome dolly up and down, right. So, it was all by hand method, right. So they would take the bolts out, crack the dome open all by hand. Just -- you know, we had a handle that you could grab onto. Before I got there, they didn't even have a handle. So we designed up a handle they could get a good purchase on, and then they could open it, and then there was also a dome dampener I haven't talked about yet, but the dome dampener was a big cylinder rod, a cylinder that they put like oil in and basically they just used it to dampen the motion, right, to make it harder to open it so that, you know, it was controlled more, right.

Q. Yeah.

A. So the dome dampener stretched across the opening, right. That's where it was. You had the hinge on one side, the dome dampener on the other side. So you're -- the hinge doesn't want to fight you as long as you've got the dolly and the weight supported properly, right. The hinge isn't fighting you, but the dome dampener is fighting you. So you can only go so fast, right. So it's a slow process that, you know, you're slowly tweaking this thing open, kind of yanking on the, on the door. So I'm not -- so

to answer your question. So I wouldn't say there's any torque generated by the process of opening it, and the weight is handled by the dome dolly. Otherwise, the thing will shear the bolts off which maybe I should mention that happened once.

Q. I was going to ask about that. Could you tell us about that?

A. We'll go into that in a minute, but I think that there's not really any torque generated in the general process of opening and closing. It would be super minimal because of the way it's supported.

Q. Okay. And the it has like a shock absorber as you noted to slow the rate of movement.

A. It's a -- you have on the door, you know, that -- so the door can't slam. Not a spring loaded one, but like a shock absorber. Kind of like you'd have on your car hood, you know, you put up your hood.

Q. Yes.

A. Except those have frames in them to go one way, but when you go down, it's, you know, you're damped, you know. It a similar, similar kind of thing but there's no spring anywhere. So you're damped going in and you're damped going out.

Q. Sure. Could you take us through the shearing of the bolts please?

A. Yeah. So we had -- you know, one of the edicts from before I got there was that you would only put four bolts in to hold the dome on, the forward dome. So you're put your passengers in,

you'd bolt your dome shut with four bolts, and that's how they dived. Stockton's reasoning was that you didn't need any bolts because the pressure of the water is going to force the dome to stay on. Well, there's some truth to that. You know, you can put some subsea without bolts in it. It's not the right thing to do. Obviously you can't get it from air to subsea that way. I also worry about the tension of the, you know, the -- I mean everything's trying to push in. So your flange can kind of work its way out, right. So that's another thing. I always worried about related to that, no so much that the bolts would shear but that the, you know, that you could have a flange problem with your flange trying to separate out.

Anyways, bottom line is Stockton had made this decision. It predated my starting at the company, and he wasn't going to change it. So his reasoning was he wanted the people in and out quickly. That's what he wanted, and he didn't think he needed any bolts other than just get it subsea, you know. Once you're 5 -- he didn't think he needed an O-ring either. Once you got 5 feet under sea, he would tell me that the O-ring doesn't mean anything. I didn't believe that, but.

So, we would put the -- oh. So we had four bolts. Right before -- okay. When we, when we shipped -- there's a little more background information. When I shipped *Titan* to the deep water test facility, I put all -- I think there's 18 bolts. I put all 18 bolts in. It shipped there. We got there. Stockton saw that

there was 18 bolts in it, and he said what did you put all the bolts in for? I said because I didn't want anything bad to happen on the road, you know. I didn't know what could have happened but, you know, what's the problem? There's 18 bolt holes. We put 18 bolts in. He said, well, why would you do that? We don't test like that or we don't -- and we tested it like that. And he said we don't, we don't dive it like that. Why would you test like that? I do sort of agree with that point. You test the way you dive. So that was a valid point, but main thing was, I don't want anything bad to happen. So I put all the bolts in, right. It really just made sense to me to just put all the bolts in.

Anyway he was upset at me about that. I got the message. Don't put all the bolts in again. I already knew that was the case but, you know, when I, you know, "screwed up, quote, unquote, put all the bolts in, he gave me a hard time.

Right before we went to the *Titanic*, like a week before, Scott Griffith was -- well, I don't know what his title was any more. He used be the director of operations, and then eventually Stockton gave me that role as well. So I don't -- he got some other director level title, but he was a knowledgeable, good guy, sub pilot, whatever. He came to me, he said, Dan, I think we should put all the bolts in the dome, and I said. Dude, I've already fought this battle and lost. I just got yelled at 2 months ago, whatever it was, for putting all 18 bolts in when we went to, you know, when we shipped this thing across the road.

Why am I going to fight this battle again? I've already lost. Like I'm tired. You know, by this time, you've got to understand, I fought a lot of battles and like I'm worn out. I've already told Stockton I'm going to probably leave the company. I'm tired of fighting with him. I had a 2 years contract. I'm going to finish my commitment because Stockton was seriously -- very litigious and proud of it and wanted -- everybody knew that if you crossed Stockton, he was going to make it as painful as possible in court, and we all knew he had the finances to do that, and none of us did. So, you know, I'm going to finish out my contract, and I already told him I was leaving.

Anyways, so I told Scott, I'm like, dude, you go talk to him. Like you fight this battle. You know, I haven't seen you fight a battle in a long time. You go chase him down. So, Scott did. Scott went back to Stockton and said, hey, we should put all the bolts in, and he was told no.

So, we get out to the *Titanic*, the sub was launched and recovered from *Titanic* on a ramp going back, you know, up and down the back of the ship. And, this sub was, you know, when we had talked to the company about the ramp and the design of the ramp, we didn't design it, right. We had a company do that for us, you know, I don't know if it's the ship company, but an oil/gas services company out there did that for us in St. John's, right. So we couldn't get a huge ramp from Everett to there, right. So we had it made up there by somebody.

But they always said, on the ship company's side, was that we will like the pad, you know, as the *Titan* comes up the ramp, it has to transition. We're always worried about the transition, right. How hard is the transition going to be? They were going to use their -- I forget what they call them, anchor blocks or something. They have hydraulic, you know, bits in the deck of the ship. It can come up. They're going to kind of like drop it and then load it that way. That was what was talked about. When we got out there, they said they couldn't do it. I forgot the reason they just said, you know, that's not something we can do. That's not a rated piece of equipment for, you know, lifting kind of a thing. So it didn't happen.

So we had tried to use buoys and stuff like that to let it, you know, kind of transition. Anyways, bottom line is the sub came up the ramp one time, transitioned kind of hard. It wasn't insane or anything, but it was, you know, kind of a bounce, and sheared the four bolts and the dome dropped off of it and fell on the platform. The platform in the back where the dome is, is tapered down to the water level, right, so that people can like kind of run up a small boat on it, you know, like a rib, right. You can kind of run up an inflatable or rib on the back, kind of like the (indiscernible) seals do, you know, fly up on the back of a ship. We didn't do that as cool as they do, but we just kind of run the front up and somebody jumps out, right. So, it landed on that slope and teetered there and never fell off in the water. I

just could not believe it. I was totally dumbfounded that, 1, it had sheared, 2, that no one was hurt, and 3, that it hadn't fallen all the way in the water and completely stopped the trip.

So we brought, you know, we regrouped. We lassoed the thing, made sure it couldn't fall off the deck. We got it off the platform with the crane, over the side, and put it onto dunnage, something like that. And, we fully inspected the ceiling surface and the dome and the viewport. So the ceiling surface, so the dome and the viewport itself, also totally shocked me, the viewport had zero scratches, not like a single scratch on it. And if you watch the video of this thing falling, you're just like, how can this happen? Like the viewport was -- obviously didn't hit the deck, but it looks like it should have. You know, so it was shocking that there was no damage on the viewport. There was no scratches anywhere on the ceiling surface, you know, a couple scratches on the outside of the dome, a 3 inch thick piece of titanium. I didn't get concerned about that. And so we picked it back up and we put it back on the sub.

And, then I wrote up a whole, you know, safety brief or incident report I should say, right. I spent a day writing an incident report about it. I called one of my engineers, the contract guy I had mentioned earlier. I said, hey, can you please do a quick analysis on the bolts. Here's the material. I think we're using 3/16, you know, stainless steel bolts at the time. So here's, you know, here's all the parts. Here's the material for

the bolts. Here's the four bolts we put in. Will you please do a quick analysis on the, you know, what it would take to shear these. And, he came back with 1. something times gravity. I don't remember if it was 1.8, 1.9, but it was basically gravity and someone bumps it, I mean it's going to go, right.

So, we immediately decided we had to put all the bolts in. And we also bought -- I forget what -- it wasn't 3/16, but maybe grade 8 or something else, some better bolt, and we put -- we started using those. I think they're more ferrous. So they corrode faster but who cares. You're replacing bolts every, you know, couple (indiscernible) or whatever it is, right.

So, with the -- with all 18 bolts and them all in, my recollection of the analysis is like instead of being 1. something times gravity, it was like 10 or 20 times gravity. I don't remember exactly, but that's where we end up.

So from then on, we only dove it with all the bolts and only shipped it with all the bolts while I was at the company. I don't know what happened after I left the company, but they reverted. Stockton's main reason for only wanting ever four bolts was the quickness of getting mission specialists in and out because you've got to understand, these guys would get in the sub, you know, typically early in the morning, but it could be any time. They get in, we've already hooked -- we've done all our periodic checks. They get in the sub. It takes them 5 minutes to load or something, get all their junk in there. We close the dome.

That's another 5 minutes. We bolt the dome with four bolts. That was maybe 5 minutes or something. With 18 bolts, it was, you know, 20 minutes or something.

And then it just takes -- by the time they finish up all their interior checks and that sort of stuff, I mean -- and if we have any problems which, you know, is not untypical that somebody's going to go, oh, wait, we forgot "X" even though they have checklist or, hey, we checked this and it didn't seem quite right. Can somebody come look at it, right? All this time, these mission specialists are locked in this tube, right, bolted shut, and they're in the sun typically getting really hot, right. So like these guys could be in there. It could be 110 degrees in there. Everybody's sweating to death and we're trying to get them off the deck because once they hit the water, it's going to get cold, right. But, you know, this whole how long does it take it get off the deck?

So once you got all the checks done, and you're like, okay, we're ready to launch. Now you've got to get, you know, the crane operator's got to be in the right place. The cable operator guy's got to be in the right place. The boat's got to be in the water to pick up -- like to go grab this thing. You know, all these things, right. So you're going to launch it down the back. All that takes time, right. And so it all adds to this time it takes to get these people off deck into the water where they can sort of be comfortable, cooled down. So that was the -- I guess the

impetus for the four bolts that Stockton, you know, his reasoning behind that. But trying to get people in and out, less time on deck.

Q. All right. Thank you. That's a good explanation. I'm sorry. I'm out of time. I need to run to another meeting, but thank you, Dan. It's been real nice hearing your experiences, and I'm sure there's plenty of other questions coming your way. Have a great day.

A. Okay.

Q. Thank you.

A. Thanks.

LCDR [redacted] Thank you, Mr. [redacted] Ms. [redacted] I know you have a time crunch as well. Do you want to go ahead?

LCDR [redacted] Yes. Thank you.

BY LCDR [redacted]

Q. My first question -- I'm going to start from the beginning. Do you know where the idea of carbon fiber and titanium came from? Like why those two materials? I know you talked about carbon fiber a little bit, but I'm curious why carbon fiber and titanium.

A. Let me give you my opinion because, you know, Stockton, you know, he probably told me this at some point, but I don't remember a direct conversation. So I'll just give you my opinion.

My opinion is an aerospace, you know, carbon fiber is widely used in aerospace. Stockton's an aerospace kind of guy. I think he might have an engineering degree in aerospace. So, no, I can't

remember for sure if that's what his degree is in, but I believe that's what it's in. He was the youngest pilot -- according to his bio, he was the youngest pilot like at 18 to fly a DC-19 with a full captain's license or something for a DC-10. You know, so he was an aerospace guy. He loved that stuff.

His initial desire was to go to space as an astronaut. When he figured out, you know, he wasn't going to be able to build something himself to go to space or one way or not go to space, he diverted to the subsea thing. It's all good, a cool bill, right.

But I believe that the carbon fiber came essentially from his background in aerospace. You know, he liked it because it was readily available. You know, he could buy the stuff pretty easily whereas like titanium is hard to buy, super expensive, hard to buy. And then, you know, he would talk about a strength to buoyancy ratio being better. Again, I think that was a bogus thing. That's just what he would talk about. It sounded technical and, you know, to laymen, in my opinion and that was it. So that's where I think it came from. I don't think if I -- I think that's probably my best answer there.

Q. Okay. Thank you. With -- from hull number 1 to hull number 2, I know it went from wet wound to prepreg. Do you know what different type of analysis was completed for the differences between wet wound or prepreg or do you -- or was it considered that they would be just as strong as each other?

A. No. So -- all right. On the first hull, on *Titan I*, before

I got there, you know, it's my understanding that they had done an FEA. You know what I'm -- a finite element analysis, right. So, you know, they had used a different carbon. I'm not familiar with it. They obviously used a different resin system, again not familiar with it. And they used the filament lining method which, you know, you get this filament coming off of a spool, going through a bath, and then wrapping on, and then hand laying in the other layers and slapping a bunch of resin on it, and then rewrapping over top and doing that 666 times. So, you know, that was how the first one was built.

And I -- they did in-house analysis, more towards the point of your question. They did an in-house analysis. There was a guy named Hossam (ph.). I never met him, but I just heard his name. He was not there when I got there, but this Hossam guy was part of the in-house analysis at least.

And then, you know, I also saw in a document you guys provided that there's a FEA analysis in one of the documents you guys provided for that first hull. And it's, you know, again I can't vet any of that. That document was 2015, 4 years before I started, but I know that's some of the analysis that was performed, that happened on the first hull.

I can talk more about the second *Titan*. The second *Titan*, again I just want to emphasize, we started out with, you know, it has to be carbon fiber, and I'm going to have to reuse the segments and the domes, but in that, I can do the best job I can

in engineering things and making sure things are safe from there, right. So, we did a finite element analysis on that. I didn't -- I don't have the skill set to do that. Neither does anyone at the company, at least not at this point. And so we hired a third party company to do that.

So we called a company called HyperSizer. I found them in a trade publication that -- and their, you know, their advertisement in the trade publication and, you know, on their website and all that, was that they specialized in FEA for carbon fiber. They are aerospace, you know, they're not a subsea company because subsea carbon fiber is not like one of the materials you talk about in general in subsea. So -- but they are aerospace, high tech, smart guys, and their product is basically a specialized carbon fiber FEA analysis software.

So they sell this product. I called them up and said, hey, there's -- like nobody here is going to run your software, you know what I mean. Like we're not -- I don't want to say not enough, but this isn't our gig, you know. We don't, we don't run the software. We're not going to buy your software and run it because we're not going to get in and get result out because we don’t know what we're doing. Would you guys please contract with us to run your own software for us and analyze our hull? They thought it was a cool idea. They liked the, you know, they liked a different thing to work on because, you know, they work aerospace.

And one of the complaints I've heard at NASA and there is like, hey, to work on something for 20 years, and if they stick around long enough they might see it fly, you know what I mean. That's how long the cycle is, right.

So they were excited that we were supposed to be going to the *Titanic* in a year and a half or so. And they were going to actually see something that they worked on go in the field, right, and see the results.

So, they eventually signed a contract with us. We worked with a guy there named August, something with a N, Noevere (ph.), something. I don't remember the exact last name. His first name was August. He was a Ph.D. they assigned to our project, a Ph.D. in -- I don't know, material science. I can't remember what his degree is, but I felt like he was very qualified, very knowledgeable, obviously to run their software, and understood material properties far greater than me or my team.

So we used him. We met with him on a very regular -- on a weekly basis. I don't remember how long, but again these things are probably documented and you can probably find this stuff at OceanGate where these meetings happened. August would bring in a -- he would bring a DEC (ph.), a side DEC every time we met. So, you know, we would talk -- he would talk us through the deck and he would analyze different pieces and parts that essentially Stockton would tell him that he wanted analyzed. The only thing that bothered me about that was that occasionally Stockton would

be on a, you know, wild goose chase in my opinion, not analyzing our hull, but analyzing the thing he wanted to build next which was like, you know, instead of using a titanium dome, he wanted to use a carbon fiber dome. And, you know, he was analyzing different shapes, and I'm like, oh, this is in the noise and not relevant to what the company is really trying to do, right. So he was thinking long term, not what he was supposed to do, but you get the idea. For me it was like stop wasting our time on stuff that we're not going to make.

So, anyways, we went through basically the whole hull, stem to stern, the pressure hull with analysis. So we did the titanium dome, the rings, the viewports, the transitions between all those things, the glue joint. I think we analyzed all them, and I think that there's documentation at OceanGate somewhere that would show all that. So I think -- I felt like the job we did engineering *Titan* was -- *Titan II*, so the second hull, was highly superior to, you know, in analysis than anything that had been done before, but again, I wasn't there for what was done before. I just knew that what had been done before, cracked and broke, in a couple of dives, you know.

Q. Do you know what the safety factor was that they used or that was the result?

A. So I -- not off the top of my head. What I kind of want to -- I can kind of talk around it a little bit maybe. So what we did was August would come in with what he called -- what he termed

a MS. So when you find the documentation, you'll see MS in there, and that is something. Something safety. Sorry, it's been a couple -- it's been 2 or 3 years now. I'm trying to what this stuff stands for. It was a safety factor or something like that. But he used that a lot through all these presentations.

So everything he'd do, he'd give us this on the positive side of MS, if I'm saying the right acronym, which I think I am. I just can't remember what it stands for, or is it on the negative MS. If it's negative MS, it's like it doesn't meet the design criteria. The design criteria -- maybe to your point, and so I'm thinking about this as I'm talking, right, it's coming back slowly.

The design criteria to your point was like 1.2 or 1.25 the depth rate, something in the ballpark. And so if it was positive MS, it was beyond that. If it was negative MS, it was a below that. If it was 0 MS, it met the criteria. Does that make sense?

Q. Yes.

A. So I believe we're in the 1.2 kind of range. It could have been 1.2. It could have been 1.5. It wasn't 1.5. You know, and I mean -- okay. The design criteria wasn't 1.5. There was places on the hull we would have been a MS of much higher than that, right, and there was probably places on the hull where we met it. Does that make sense?

Q. Yes. HyperSizer, where is that company from? Is it local?

A. I believe they're in Florida.

Q. Florida. Okay.
A. I believe so, yep.
Q. Okay.
A. So one thing I want to say about HyperSizer, now I did them on my own, but when I went back to -- we were still talking to NASA at the time I believe or they were -- NASA stayed in the mix. So like I talked to NASA, not on a daily basis or anything like that, but on a, you know, every couple weeks at least, maybe every week, I don't know, they were on the phone through a period of time, right. Even beyond when we had them contracted, because they were interested in this big think laminate that nobody was making, right. So they were interested.

So, I asked NASA who could help me with, you know, who would help me with that, and -- or I asked them, do you recommend -- do you guys know HyperSizer, and they said, yes. We use their software. And I said, do you recommend them? And they said, yes. So I, you know, I felt good about the interaction with them, but I also had NASA as kind of a backup saying, yeah, we use those guys and we like their stuff. So I felt good about our analysis of the hull.

Q. Great. Thank you for that. When -- after when the Deep Ocean Testing Facility -- or actually I guess I'll take a step back. I know you didn't -- you weren't able to do any NDT minus the Deep Ocean Testing Facility for hull number 2. Did you do any destructive testing to validate any of the material design?

A. Yes. So, before I got there, again they had done a third scale model which they imploded, and then they had built their full size hull. I didn't really have, you know, have anything to do with or know a ton about it but, you know, I obviously know the results.

When I got there, we also did a third scale model. We hyperbarically -- we instrumented it with the AE and strain system same one that it goes in the *Titan*, and we hyperbarically tested it at the University of Washington in their chamber. They just -- we just used the facility, right. They didn't make the test protocol or anything, but did -- that hull was supposed go to like 6,000 meters. It was a one-third scale model, should have gone to ballpark 6,000 meters according to -- I don't remember according to what, That was the number that was in my head according to the analysis. I just don't remember what the analysis was. And it went -- it probably imploded at 2,000 something meters or maybe 3,000 meters. So it didn't go to depth.

Built another square hull -- or sorry. Built another third scale model hull, you know, change -- I think we probably changed some of the manufacturing techniques or whatever, tried different bagging techniques, developing techniques and that, you know, during the manufacturing process. We took that one to the UW pressure chamber after instrumenting it with strain and AE. That one was about to implode at ballpark 2500 meters. Again, it could be 3,000. I don't remember but it's far shy of where it was

supposed to go.

We had a pool, you know, we had taken -- not -- there's no money involved but we had like a betting, you know, who would -- how deep would this hull go, you know, on the wall and, you know, I think Stockton was the only that said it would go deep. Everybody else said it's going to fail. We had two examples prior plus a main big hull that said these things fail early.

So then the question is -- well, I wanted to give you my mindset. When that second one failed, my mindset was we're never going to the *Titanic*, you know. My contract is nearly up. We're not going to be able to make it, you know, none of these test hulls go. So like I got a few months left, and I'm going to build -- you know, I'm going to be out of this place.

But the problem -- so what happened was, we knew -- I felt I was competent that the problem with the hull, the third scale model hull was the bulk. When you shear one of these thick laminates, and again I'm no laminate expert. You guys can find somebody that can talk about this better than me, but when you shear one of these things, they say it comes gelatinous, right, and it's kind of moving around and wherever the stresses are, you know, depending on where the stresses are, that bulk factor they say doesn't know where to go and the bulk, you know, it causes a wrinkle is the bottom line. So you get this wrinkle in the hull, and you know, depending on the size of your hull and the amount of material, the wrinkle can be large. The failure always happened

on the wrinkle which is really obvious and makes sense, right, because you've got this round circular thing. You've got pressure all equal from all around, but then you've got this total non-linear in the middle. That's where your failure's always going to happen, right, on this non-linear thing right in the middle. The stress is going to get focused there, and it's going to go there. So that's what happened on all these hulls.

So, you know, a lot of discussion happened around how do we get rid of this -- how do we control the bulk so that we don't get a wrinkle, right. And this got discussed with all the parties, NASA, Janicki, Electroimpact, OceanGate obviously, HyperSizer, Toray. This was a big topic, right. So the basic answer is you can -- there's things you can try to do to de-bulk, get your packaging, you know, your laminate tight as can be, right. So you control the tension as you put it on the mandrel. You can control the heat that you put it on which kind of initially this gives it a little melting, right. There's like this heat head on there that kind of melts in it.

We tried things like running the heat head up and down to melt it even more. We changed the tensions. We bagged it and what they call did a de-bulk cycle in between layers. I think on one third scale we did it almost every layer which is insane because it's like 160 layers. So anyways, we tried all these things and those hulls still got wrinkles.

So the final kind of, you know, big fix for this, that

everybody kind of knew, was or talked about was you have to cure it multiple times. Stockton didn't want to cure it multiple times because he -- because it cost money. Every time we cured it, any of the hulls, we'd have to take it to a facility to have it cured, right. You have to pay for their autoclave or their oven or whatever, and you'd stick it in there. They have to bag it -- vacuum bag it, the whole process of bagging and what materials go into the bagging and vacuuming and you stick it in there with a whole bunch of thermal couples and you cook this thing and it eventually comes out hard, right.

So, there's a lot of money involved with that, and there's a lot of time involved with that, for the full scale hull because now every time you put on a layer, a layer, we eventually landed on a layer being a 1 inch thick layer. That number is just something we picked. You know, you could pick another number. The small the number, the more control they're probably going to make laminate. Yeah, one layer. People are really confident they can cook off one later perfect, right. You've got 100 layers, they're less confident. But, you know, we had to come with some balance, right.

So basically the bottom line was are we going to multiple cure or not. Stockton basically told me no. He never told me yes. And so my mindset was we're never going to the *Titanic* because we know that this thing is going to get a wrinkle. We know that if it gets a wrinkle, it's going to fail based on all

the other testing we've done, all the third scale models we have made, and the previous one before I got there. We knew that the hull would fail at a, you know, low depth, not making depth, right.

So anyways, it was around the holiday time when this is coming to a head because we had the first layer on, right, the first 1 inch was on. We needed to make a decision whether we're going to pull the thing off the, off the AFP machine. You guys know what an AFP machine is?

All right. Let me keep going because I'm going to get in a tangent and get lost. We had to pull it off the AFP machine. It's a bit robot. We put it on a truck, you know, bag it up, put on a truck, ship it 2 miles or 2 hours down the road, or an hour and a half down the road, something like that, to Janicki where they could cure it, right. They have an oven big enough to cure it.

So the question is are we going to do that five times and bring it back, stick it on the, you know, stick on the AFP machine again and lay the next layer and repeat the process five times or are we just going to go for it.

Stockton never told me I could do it, but -- I don't know. Like he never exactly told me I couldn't do it, and I was at that point in the mode where if I didn't get a hard no, just went forward. So I didn't get a hard no and absolutely you will not do this. So I just pushed forward, and we did the first layer.

The first layer came out good, you know, better than anything we had seen on all the test -- two other part. Two other test parts I didn't talk about, we did a third scale model. I talked about second and third scale models I talked about. We did a full diameter ring and we did I believe a full diameter, full thickness called a slice. So these were not full length, but one of them was like 2 feet plus 2 layers. That was to test the shield ply layer that goes in between the two quote, unquote, layers that get cured separately. And actually Electroimpact was so insistent that we needed to do multiple cure, they paid for that themselves. They were so insistent, you're not going to get a good hull. You've got to do these multiple cures. Stockton kept saying no.

And they came back one day and they said, listen, we're so convinced that this is the solution, that we will pay for this. We will not charge you to lay up this up this thing and we'll -- I think maybe we provided the fiber. I can't remember. We were sharing fiber almost at that point. Like they had stock of what we had of the same stuff. So there were times when we were running out before our next shipment came in and they would lend us and we would pay them back. So I don't know whose fiber got used, but bottom line is, they were so convinced that they paid for that themselves or didn't charge us, one or the other. I don't know how we did that. And they did that to a section. They did it quickly for us because that was another time constraint problem, right. And showed that basically that that can work.

But -- so that was the second -- that was the third model, didn't pressure test it because now it's full diameter and we don't have test rings to glue on and all that, the whole diameter, and you've got to go to the DOTF. So it's very expensive. There's nothing else that's going to fit that thing.

And then we did a full thickness but again only probably 2 feet long 4 or 5 inches thick I believe test part. So that also showed that we can -- I don't remember if we did that -- I feel like we did one of the full sizes without the multiple cures, but I think it would have been that full thickness one, and we got a big wrinkle.

So again, it just confirmed my opinion and most of the industry opinion that if you don't do multiple cures, you're going to get a wrinkle, and I knew from testing if we get a wrinkle, we're not going to pass -- it's not going to pass the hyperbaric testing and implode or we're going to stop before it implodes but it's not going to meet the depth requirement.

So I was pretty convinced at that point, we weren't making it to *Titanic*. I thought there was no chance we would make it to *Titanic*, but since Stockton never stopped me, I continued forward. I got the first layer cured. I don't remember what the discussion was, but he didn't like totally freak out at me, you know. It was kind of like, okay, well, whatever and maybe we'll do more.

Then second layer, he didn't tell me no. Got it cured. I think this went through the third layer same. Then he said we're

just cure the final 2 inches all at once. I was like why? You're so close. You've spent 80 percent of the money. Just do it. And we found why it happened. We were able to cure every inch, and we had a hull that we thought was, you know, I was -- that was the first point I was like, okay, this might happen, right. We've got to test thing and find out, but this might happen. We might make it to the, you know, we didn't get the wrinkle that I was -- knew was going to happen if we didn't cure it. And so, hey, we have a shot, right, and that was the first time I had hope that the test -- the hull would test -- pass the hyperbaric test. And that was near the end of my time. It wasn't that far from the end.

Q. Just to clarify, did you ever use the same process for your third scale models that you did for your full scale model?

A. Yeah, yeah. We tried to be as close as possible. I can't swear that nothing changed. I mean I know it got made on a different robotic cell but the same AFP process, the same carbon fiber, right. The same kind of bagging. I can't swear that the autoclave or the oven, I don't remember if it was autoclave or oven. I think it swapped between the two. My guess is that might be different, but also we were trying to control all the variables is the name of the game, right, and document it all so that we could repeat it. Two things, know what you did and repeat it if you ever want to do it again. Obviously if you don't document and after 2 months, you're not going to remember exactly what you did, right. So, yeah, that was the name of the game.

I can't swear there was nothing different at all but, you know, to the most of our ability, we kept it all the same.

On the curing side, the reason I'm hedging a little bit is because there are a lot of opinions about what's going to do the best cure, you know, and the layering of the, you know, doing it in layers now changes the big equation, right. It's not the same equation as if you're going to do a 5 inch laminate. The cure schedule is not going to be the same as a 1 inch cure and then multiple 1 inch cure, you know, five 1 inch cures. It's not the same.

So there was software that's probably super expensive. We didn't own it again. We would have known how to run it either, but it was -- Janicki had this software called Raven Software, and they would run some -- I don't think they ever charged us, but they may have. We may have paid for an analysis on that. I just can't remember. They ran this Raven Software and helped develop some of the cures. But again, that was -- those conversations, those are hard, not difficult conversations. They were just, you know, technical conversations. My team didn't have all those skills. So we relied on NASA, Janicki, Electroimpact, Toray. Those guys would all be on those calls, you know. Maybe not every single one, but on a regular basis, those guys would be weighing and people would have a chance to weigh in on all of our -- all of those things. Stockton would be there, and we would get their expert opinion.

Q. So for the third scale models, they were multi-cured but maybe not the same scaling as the full --
A. They were not multi-cured.
Q. They were not. Okay. They were not multi-cured.
A. No, just what generated the wrinkles, right. This is an important point. All third scale models, not multi-cured, all generated large wrinkles, all failed on wrinkles. The implication is you build a full size hull, has a wrinkle, you're done. Like that is going to be a failure. It's not going to test the depth. These third scale models were supposed to go to 6,000 meters ballpark. They went to like 2500 or something like that ballpark. I don't remember exactly. It might have been 3,000 but it wasn't 4,000. It wasn't *Titanic* -- they didn't make it to *Titanic*'s depth which was 3850, and they were a third the size of *Titan*. So like it's an easier problem, you know what I'm saying. Like the smaller the cylinder, the easier the problem for going to depth.
Q. Sorry. I'm going to ask another question related to third scale models. So did you ever have a third scale pressure hull that went to depth?
A. No.
Q. No. Okay. Thank you. Was there ever a feedback loop with HyperSizer once your discovery meant maybe -- or was it your understanding that it was a manufacturing defect that was causing these, like you said, the wrinkle or was there ever a feedback loop with HyperSizer to figure out what was expected, the depth

that was expected to be met wasn't being met and maybe how you could add those defects into the model so that we could -- you could have a more realistic model?

A. Yeah. For sure, there was feedback. I don't remember specific conversations, but definitely all the way through, hey, out third scale model didn't make it to depth. What think? Those kind of discussions were had for sure. And then the whole thing was FEA, you know, finite element analysis, like if you get bogus data, you're going to get bogus results out, right. So, again I'm not an expert at FEA. So that's why we hired HyperSizer, you know. I couldn't even run their software but, you know, we gave them -- so here's how we crept in on this right inputs, you know, trying to get the right inputs.

We used a material that was understood in the industry, right. What's that mean? That means like this is a material that I believe is used in the Dreamliner, same material, right. And what that means is the aerospace companies, they had to do their due diligence on this material because of FAA regulations. So they had -- they do -- and I'm a little off my depth here but this is what I remember.

They had to create sheets called the allowable sheets. So the first thing the FEA guy asked us was, you know, the HyperSizer guy asked us was, what are the allowables? And, you know, of course, I'm scratching my head like what's that mean? And so then he explained to me. Okay. Well, you need -- the allowables are

kind of like the data sheet for the, for the carbon fiber resin system, right. I don't -- again, it's a little bit outside my area, but it's like I don't think it's the allowables or I don't think it's the data sheet just for the carbon fiber. I don't think it's data sheet just for the resin. I think it's like the combination. You use this combination of resin and carbon fiber, maybe even in this kind of lamination. These are the kind of results you're going to get, right. And they -- this is a 100 page kind of paper. I might be off on that a little bit, but you get the idea. This is a thick document, tons of technical, highly technical stuff that if you're not in the industry, or you're maybe a material science guy, you might be struggling. As an electrical engineer, I was struggling with that stuff, right.

So anyways, we were able to get the allowable sheet from somewhere because Boeing or somebody had used that material. Occasionally at least, those things aren't even publicized, you know, because Boeing spends hundreds of thousands of dollars to get this allowable. It goes through testing to figure this out. They don't necessarily just want to hand that to all their competitors, right. But somehow we had the allowable sheet for this Toray material that we used.

So that's how we tried to get correct numbers. The numbers that are FEA, THD, we're looking for, were found in the allowable sheet, right. And there's a Class A allowables and a Class B allowables, you know. I don't know. I don't know when you get to

use which one but depending on what aerospace thing you're doing, that's higher tolerance for something or less tolerance and you can pick based on that stuff, right. Did I answer your question?

Q. You did. Thank you.

A. Okay. Thanks.

Q. Switching to the testing at the Deep Ocean Testing Facility, how many cycles to depth did you do?

A. I don't remember exactly the number. Again, I'm -- this is all documented somewhere at OceanGate. They will have these documents. You'll be able to find all the documents for the cycles, the plan and the results. That all exists somewhere.

I want to -- you know, if you want a ballpark number, I would guess 10 to 15 cycles to depth, something like that. I was a proponent. It was -- I want to say it was 3 to 4 days of testing, something like that, you know. It wasn't plus a day. Maybe it was minus a day. You know, and the kind of model I was shooting for or we, you know, I got Stockton to agree to, because ultimately he made the decision about how we would test it, was let's simulate diving to the actual *Titanic* because otherwise it's like you're stepping down, and when I say stepping down, I mean going deeper in depth, the graph is what. So you go depth first time, depth kind of goes up, the graph rates, I'm thinking in the graphs, right.

So you're stepping down in depth versus time, and you're and it's holding. So you kind of creep up on it. You just don't like

jam it to depth the first time on the first try, right. You kind of go, hey, let's go to 500 meters, and you stop there and sit there. And you monitor the hull with the AE system and the strain gauge, and you take a look at everything. You might sit there 20 minutes, and you're okay, looks good. Let's go to the next step. So you do that and you go to 2500 meters. Well, it never did, right. Probably every 500 meters ballpark I would say we did to start with.

And you do that, and then sometimes with carbon fiber, there's this phenomena that Stockton used to talked about, about seasoning the hull. That's what he called it. Basically there's -- it's -- I believe it's a known phenomena that the first time you pressure a carbon fiber pressure vessel, you're going to get a bunch of noise out of this thing. And, you know, honestly the noise is carbon fiber breaking, right. But this is understood. You're going to break some carbon fibers that are not perfectly in the laminate somehow. And then the idea is that after you reduce the depth and come back to those depths, all that stuff's going to be quiet. The fibers that break are going to break. Once that's done, you either -- I don't know. Stockton called it seasoning. You season the hull, and then you can go back to that depth without noise. So that was the goal, right. So initially at least we crept to depth or staged to depth. We saw some noise. We back up. We'd go back, and the hull was quiet.

So we did that. We also gathered strain -- I think I

mentioned this before. We gathered strain data. We also gathered displacement of the hull. And ultimately the stuff -- the hull was -- we thought the hull was quiet. It was quieter than ever -- anything we had ever seen and tested before. So any third scale model that I had been a part of testing which was the two prior third scale models and the original *Titan I* hull, that had the crack in it, it was quieter than any of that stuff by a lot. I mean like it's 10X different, right. Super quiet. We were actually looking at each other wondering are the instruments working? You know, like it's (indiscernible). Is everything actually working? Because we had never seen anything this quiet. Like, yeah, everything's working. You know, we -- he had two tests that he'd like to do. One was a -- he got these out of white papers. One was a pencil break, lead break test against the side of the hull. You could break a pencil lead, like a number 2 -- not a number 2, like a mechanical pencil, a little thin, .05. You could break that against the side of the hull, and you'd hear that. You'd pick that up on the AE system.

You could also hear the center punch test. I thought it was pretty bogus but he had a center punch test I thought was pretty bogus but he had an automatic center punch. You know what those are? Little spring loaded thing with a point, right. You take that off. He had a spot (indiscernible) on the titanium, he would use it on or we would use it, whatever, but you'd press it. It'd click when the spring passed the detent or whatever and you would

pick that up on the hull.

So, you know, we moved -- the equipment was working, and we seen the initial noise that you'd expect and when we backed up and came back to depth, the thing was so quiet, it was like, you know, that was the first time I was like, oh, we're going to the *Titanic* now. We're going to make it. It was my epiphany like, hey, this is actually going to happen. We might actually -- I might actually go out there, you know, kind of thing.

So I was very confident in what we had done there. It felt, you know, it felt like we had done the best job under the constraints we were given, you know. We're always going to build carbon fiber. We're always going to use the domes that we had and the segments, but I felt very comfortable that we had tested it well. I also felt very comfortable that we could detect failures before, you know, before an implosion because we had done it on a third scale model, right. And we had detected them on both -- basically every hull we did -- we tested, we detected the failure was coming, right.

One, we took all the way to failure. The full size -- I'll just go in order. The full size hull that I was there fore, we took nearly to failure, saw strain separate. That thing was going to go any second. We backed off, didn't fail, but we had pushed way beyond where you would ever want to see any noise in the -- in a real life operation, right.

Third scale model, first one, we saw failure coming. We kept

going, and we imploded it. The second third scale model, we saw implosion coming, and we backed up and stopped. And we saved, you know, saved the hull just -- we saved the mess of cleaning up the hull in pieces, you know, the hull's never going to get used for anything. So I felt pretty comfortable about our testing.

Q. Okay. Thank you. And do you know what the max depth you tested the full scale hull to?

A. I think it was 4200 meters --

Q. Okay.

A. -- on that documentation somewhere. I'm not sure, but that's what I believe it was.

UNIDENTIFIED SPEAKER: How long would you keep it at that level?

MR. SCOVILLE: I think we probably kept it there 5, 6 hours, something, and I think we probably went there more than once.

BY LCDR [redacted]

Q. Great. Thank you.

A. We (indiscernible) on with the 4200 once, but we went to 4,000 multiple times. I don't remember exactly, but that was the kind of thing we were doing.

Q. Do you know if the design life of both the pressure hull was?

A. I have no idea. Design life you said?

Q. Yes.

A. Yeah, I have absolutely no idea what the design life was. This is a one-of-one hull. The hull they built before had a big

crack after a couple of dives. I had no way of knowing what the design life was. My thought was that I have no idea how -- I didn't like the business. I thought the business side of this thing was a disaster because you don't even know if you're building a hull that can last you 5 years. And I would mention that to Stockton and Stockton would say, it doesn't matter. We'll just build another one which didn't make any financial money sense, but anyways. I remember one time him saying, if he could get two seasons out of it, he was happy. We'd just build another one. I was like another one every two seasons. But, design life, I had no idea.

But what I was confident of is that we could detect failure coming. There should not be any noise coming from the hull on a normal dive, even the *Titanic* should be quiet the whole time. If there's strain is doing anything weird, any kind of non-linearity in strain gauge, and we had multiple. So it's easy to pick out non-linearity when one strain gauge takes a flier, right, it's pretty easy to see that coming. And any AE noise should be an all stop, no more diving until we figure that out, right. I mean there could be other reasons, like something could be dangling on the hull and going clank, clank, clank, and the AE registers it, that's possible, right. But we have to understand that or test to figure it out and make sure that if there's any noise or any strain non-linear areas, it's got to be an all stop before we put anybody else back in it.

Q. So was the idea that that pressure hull would be used until there was some indication that it was failing?
A. Yeah.
Q. It wasn't like use it for 5 years and then do a new one?
A. It was I think more the former. You would run the hull until you saw any sign of failure, and then you would stop using the hull.
Q. Okay. Thank you.
A. And then you have to decide on -- make a business decision of what you were going to do next, right. You know, the options are build something new or stop. A new business plan, I don't know.
Q. Do you know in their FEA model if they were able to model fatigue, you know, over time use at depth?
A. I don't know. I don't recall doing that. I don't know that we did or didn't. You have to find the documents.
Q. Okay. Thank you. Was there any consideration given to do destructive testing on like coupons? I know similar how you do steel, but something like that from the pieces cut off of the carbon fiber hull, like the piece right next to where it was cut off?
A. I don't believe so. So our destructive testing was sort of -- and you can use this both ways, right. The hyperbaric test could be either a destructive test or not. We did both. So, you know, I would just say on the end pieces, I don't know -- I don't recall any discussion of a destructive test on those. I'm not

sure what you would do to do a destructive test off the top of my head either. So, I don't know. I'm thinking the answer is no to your question, and I don't know what you would do, you know.

Q. Okay. Great. Thank you. Switching gears a little bit, drop weights. Do you remember when a drop weight -- what time or what distance to the sea floor would be normal for dropping the weights?

A. I'm not a sub pilot. So I don't know, but in general, the theory is, right, you would drop them close to the bottom, the reason being is you want to go, you know, you've got this 2 1/2 hour trip to get down there, and you're only going to get down there in 2 1/2 hours if you're heavily weighted. The idea is you're going in the water heavy, and you're going to get rid of a bunch of that weight when you basically get near the bottom and you want to start slowing down. So you're, you know, like I say I'm not a sub pilot. Never actually had to do this but, you know, the guys would drop weights a couple hundred feet off bottom typically. That was the typical kind of thing. Start slowing down before they got to the bottom. If they didn't drop them there, they'd drop then when they're sitting on the bottom, but generally they'd want to slow down, right, and not smash into the bottom.

Q. Okay. Thank you. The adhesive between the ring and the carbon fiber, who applied that adhesive? I think -- was it you or was it someone on your team that applied it?

A. There were several people applying it. I probably was one of them but, yeah, my team basically, yeah, there's probably three to four people applying because there's a time limit for the glue. Once you mix it, you've got -- I don't remember if it was 20 minutes or what to get it applied and glued together before it's going to start kicking off, right. So you've got this short timeline, I don't exactly remember the time, but you can read it on the data sheet, I'm sure. And you --

Q. OceanGate employees though were the ones that applied it.

A. OceanGate employees definitely did that.

Q. Okay. Thank you. Do you know how that adhesive was selected?

A. Well -- so, just you know, the history. The adhesive was something that was chosen prior to me getting there and was built into the *Titan I* hull that failed, right. So -- but the adhesive to the best of our knowledge was not the failing component. So you've got, you know, that whole piece where it already existed and there was, you know, no indication as when I came on board that that was a problem.

Okay. Now, once I came on board, we ended up building the second hull -- or sorry, third scale model, right. We used the same adhesive, and again we imploded that one, but again there was no indication that the adhesive was the problem. I believe -- so then the same thing holds true for the second third scale model, right. Again, we used the same adhesive, and as long as you're

putting -- you know, you said why did we use adhesive in the first place, right, because you've got carbon fiber and titanium. You're going to put them together, and you're stuck doing that, and you can't drill into the carbon fiber and put a bolt in or anything, right, because you can't mess us the laminate in any way. So you have -- you're forced into using some kind of adhesive, right.

So anyways, I think that the, you know, the idea was like is this the right adhesive. We've used it multiple times before. There's no indication that I knew of to say that the adhesive wasn't fit for purpose. It's high tech aviation stuff. It's not Harbor Freight, you know, or Elmer's Glue or anything like that. So then the job from there is like how can I do the best job I can and make sure that I'm vetting this the best way I can. You know, I have no way of knowing. So I called up the manufacturers of the adhesive and stuff like that. I think you guys put one of the emails in here, and I was basically trying to ask them all kinds of questions about the adhesive like how do I apply it? What, you know, how do I do the best job surface prepping if we're going to use this adhesive, surface prepping and making sure that I do the proper preparation to get this glue on in the best way I can? Like what's the gap that's supposed to be left? Are you supposed to squeeze parts right together? All these kind of things, right. Those were the things I was asking, trying to figure out how do I do this best because this is what we're going to use because I

have no way -- I have no reason to think we're not using this. We've used it in the past. It hasn't failed, right. So that's what I was thinking.

Q. For that adhesive, do you know if there was temperature limitations for that?

A. I mean I don't know them off the top of my head, but I would assume there are, you know, some temperature guidelines.

Q. Okay. Thank you. Just a few more. Were you present when they added the lifting pad eyes to the *Titan*?

A. I was not. I was at the company when that happened, yes. That was something that I had suggested because we had no good way to lift *Titan* safely. We had no -- we were under slinging it, but the under slinging was done in a -- on the titanium segments, and there was no space for the sling. So there was other equipment there with sharp -- sharp edge might not be the right term but, you know, corners. There was no place for the slings to fit. So like they were barely kind of on there. So I was hounding Stockton for probably I don't know, 6 months, saying we have to do something different. And eventually he approved the, he approved the pad eyes.

Q. Do you know if those pad eyes were considered in the structural analysis, the FEA? And was there any consideration for like -- because the aft side was heavier than the forward side. Was there any consideration for, you know, uneven loading on those rights where the pad eyes were?

A. I believe that the -- I believe there was an analysis done for lifting, you know. I'm sure there was analysis, a lifting analysis done for the pad eyes. And so then -- and I had every intention of having them pull tested because I wanted to be sure that, you know, from my experience in knowing gap (ph.), gap percentage, if Oceaneering shows up with a sling that doesn't have the right documentation, I don't care if it's brand new or not, BP isn't lifting it on the boat, like that was my experience. Like I kept telling Stockton, like if you don't have this thing pull tested and you don't have a cert in your hand when you walk on the boat, they're not lifting your sub on the boat. Like what's your plan? He just said, ah, it'll be fine. And to be honest, I was shocked, but he was right. Nobody asked for a pull test cert. But I was, I was trying to make sure we had pull test cert so I know we had the analysis done so that we'd have a -- so that we could get, you know, get a proper pull test done. Those again would be in the CAD system.

We had a pull test set up. I worked with a local company, found a place that could pull test it. I wanted to pull test it before *Titan* was assembled, so that if we did any damage, we only damaged a segment/ring, not a hull, but Stockton said no. So I couldn't get it done. And then I was still hounding about this subject, you know, like later on before we went to *Titanic* because I was legitimate worried that we wouldn’t get to lift it on the boat. And so he finally said yes. I got something all set up

with a local company to do a pull test, and the morning of the pull test, he canceled on me. Not the company because Stockton told me to go cancel. So I had to call this company and say, hey, I know you've already invested some money into this project and all that, but I'm not showing up. Sorry. They sent us a bill I believe or at least an email with a bill in it, and we never paid. You know, we didn't have a contract. So no pull test was ever done, but the analysis for the pull testing and stuff like that was done, the specs on it that were done.

Q. Okay. Thank you. Going back to the hinges, just a very quick clarification, was the intention of adding the hinges for it to actually hold the dome even though it was incapable of doing so?

A. I have no idea. I wasn't there for any of that engineering.

Q. Okay.

A. I know that -- I wanted to change it and I was told no.

Q. Did you have any major concerns during the design phase or the building phase of the *Titan* hull?

A. My biggest concern was around carbon. It's not something I understood well, not something industry used. Stockton was absolutely going to do carbon. There was really no option. So, you know, the biggest -- it was a big unknown for me. I was, you know, I had -- the only experience I had with it is Stockton's first hull that had a crack in it. So that was my main concern. Like I said, I didn't even think we were ever going to go to

Titanic until a couple of months before the trip when we first single -- or multi-cured it and we came out with something that didn't look like it had a big wrinkle and second went to the hyperbaric facility. So we're talking 2 months before. That's when I realized, hey, this could actually happen.

Prior to that, I really didn't think it was going to happen. I would tell my team, you know, we're not going because we're not going to multi-cure the hull. So, yeah.

To your question, that was probably my biggest concern. Lots of other concerns like my biggest other concern was Stockton's general decision making process. I didn't think it could ever lead to a successful business. He made lots of decisions that I would absolutely not agree with. Here's -- related to safety and business, you know. One of the things that I, you know, I want to give you an example of one of the safety things, right.

So we had a system for, you know, we had a safety system and we'd accumulate points for anomalies and strikes. If you get three strikes the dive's over, right. Different things could add up to these points.

We were doing a dock dive one day. Scott Griffith was in the sub as the pilot with a few other people. So there were 3 feet deep or something, right, on the platform, right under the water at the dock, antenna's still sticking up, right. So I'm radioing back and forth with Scott. Scott radios up, hey, the scrubber system isn't keeping up. Can we please come up? Please bring us

up. Scrubber's out of range. We need to come up. That's not the first message I got from them about this, so I knew, you know, it was building. But eventually he said, bring us up. Scrubber's out of range. Stockton happened to be standing on the dock --

UNIDENTIFIED SPEAKER: Why don't you explain what the scrubber system is.

MR. SCOVILLE: Okay. Yeah. The scrubber system is when you're in a sub, you're in a closed environment, right, and every time you exhale, you're exhaling carbon dioxide. You need to take that out of the air and over time you've got to scrub carbon dioxide and thus the scrubber, which is a chemical process, and you need to add a little O_2 here and there, right. So there's a system in the system in the sub to add O_2, keep your oxygen levels up and to remove carbon dioxide. If you don't remove the carbon dioxide and remove it, you know, you have carbon dioxide sickness, right, and people pass out or whatever. You know, it can be fatal. So it's really critical you monitor these two things.

The scrubber was a homemade Stockton thing. I tried to get rid of it multiple times. Always was told no. It was literally made from a Tupperware container that came from Walmart or Amazon or somebody like that. It had like a screen in the bottom with an air space underneath. You would pour the scrubber into this thing which was a granular chemical material, soap and lime is what it is, right. You'd pour that in there, and then there was a lid, Tupperware lid that went on and in that Tupperware lid there was a

computer fan. You'd attach the computer fan to a battery. That would pull air out of the environment, push it into the scrubber material and then, you know, through the grid at the bottom and out some vent somewhere.

So this thing never really kept up. If you put four people in the sub, it really couldn't keep up with the occupants' breathing rate. So -- and it looked like it was a total piece of junk. I mean it looked like a Tupperware container from Walmart with computer fan on the top. So it was always something I was trying to get out. You could buy these things off the shelf for submarines, you know, or submersibles or whatever, but Stockton never wanted to spend money. He was proud of this thing he made in his garage.

So, it wasn't keeping up. The dive continued. Eventually Scott said, hey, please bring us up. And when he said that, Stockton overheard it, and said, no, that's stupid. That's -- we don't -- we're not bringing up the sub for a CO_2 level of X. Yeah, it's out of the range, but you can go a lot farther than that. I'm like -- so I took Stockton aside because the whole team was there and I like raised my head and looked, you know, eyes around, and I could see that, you know, my team was just livid because, you know, here's Stockton not -- the guy in control is the guy in the sub. If the guy ever says, I need to come up, there's really no question. You immediately bring them up. We sort it out later, right. This is not a -- it's not a discussion,

right. And then the next person in line is supposed to be in charge is me. So I'm there ready to bring them up. Stockton's telling me, no, don't bring them up, and he's all pissed about it.

And so I said, Stockton, we need to talk. Let's -- so we walked down the dock 20 feet, so we could get away from the team. And I'm like, dude, you cannot make this decision right now. If you make this decision in front of the entire team, you're going to invalidate every safety thing you've ever said and everyone you will ever say which was already the case but, you know, you couldn't tell him that, you know. So he kind of stamped his foot and said fine, and he walked off. And I brought Scott up.

But, you know, this was the kind of thing. Like there's a clear protocol. The protocol is sub brings -- says I've got a safety issue. I want to come up now. There's zero reason not to bring him up. We're at the dock. It costs zero money to bring him up. He's going to be up in 30 seconds or 1 minute and who cares. But Stockton didn't want to come up for whatever reason, wanted him to keep working, I don't know. They were just down there testing systems. He said no. We went through that little thing, but it's just an example of stuff like that.

Q. Thank you. For the real time monitoring system, did you have a lot of experience with that? Who's checking the strain gauges.

A. Prior to coming to OceanGate?

Q. No, no, with OceanGate.

A. Okay. Well, so it depends which piece of the -- which piece

you kind of mean. My --
Q. Okay. They're more general questions.
A. It's just a general question?
Q. Yeah.
A. Yeah.
Q. So I guess my questions is more specific questions make it easier. How are the decisions made for what is constituted when you would need to come up? Like we understand there was green, yellow, red, and who made those decisions for the set points? And, how are those decisions determined?
A. Yeah, okay. Yeah, I was totally off on the question. So there was -- I recall the, you know, the green, yellow, red is like an AE system coloring scheme, you know what I mean, that kind of gives you an indication of what level of amplitude the sound is on the AE system. Who set those levels? Stockton set those levels. I have no idea what they were. I just know that he set them. Phil would have coded them in the code. They were adjustable. I'm sure you could change them on the fly, you know, maybe not the average operator, but anybody who knew what they were doing would have been able to go in there change those things. I'm not saying they were changed, but there's a set point, right. You set the set point to what number you wanted and then it would change color based on the set point and the amplitude. Did that answer your question?
Q. It does. I do have one follow up question. It's our

understanding that there was -- they had feedback inside the sub. Was it only a color system? Was it more like you could actually see what the strain gauges were reading? Or was it really just, okay, if you have a certain amount of acoustic hits, then that would constitute the yellow, red, green?

A. Yeah. I am not sure. I did know -- I would have known the answer to this question at some point, but I never was in *Titan*, never, never dove in *Titan*. So I never really sat in *Titan* to watch the screen, you know, of what exactly happened. I'm sure I was told and knew the answer to this question. My gut feel is they could see more than red, green, yellow. I do remember Stockton talking about wanting to dumb the system down to red, green, yellow, because he didn't want people to be able to make decisions based on -- he wanted decisions made for everybody. You know what I'm saying. Like I don't know if I would say, well -- but he wanted -- he didn't want there to be ambiguity in the decision. That's what he would tell us. So he just wanted to make the decision for us. He could set a set point ahead of time. It would say red, green, yellow. This assume anybody else ever piloted the sub besides Stockton, which occasionally happened I'm told after I was gone. I don't know. I wasn't there. So I don't know for sure, but I believe somebody else piloted -- there was a pilot without Stockton at some point. But when I was there, Stockton was always the pilot of *Titan*. And so he wanted the system dumbed down to where the pilot wasn't making any decisions.

It was red, green, yellow, based on whatever was set. So I believe the answer's yes, you can see more or you could probably have the option to go red, green, yellow.

Q. Thank you. Just two more questions. The first one is, why did you depart OceanGate?

A. Okay. So, officially on paper I was let go for not getting vaccinated. So -- but I don't believe that was the real reason. What had happened is around April, my contract was getting close, right. I was getting to the point of it was coming. I had been fighting with Stockton for 2 years nearly at that point, was pretty frustrated with how much I had to argue with him. You know, it's just not fun any more, right. How he hadn't supported the team as far as the people we needed, the budget, all that stuff.

So I kind of let it slip one day. We had, we had another person quit for safety -- she claims for safety reasons at least to me. She told me that. She worked for me. She quit, and said -- and so I was talking about Shuman and about Shuman said to me, you know, we're talking about the situation with this girl quitting. And Bob Shuman said, so, you're not going anywhere, you know, are you, Dan? You're not going anywhere any time soon are you, Dan? And it was just a nice, just general chatty comment, right. And I was kind of pissed off that day, and I probably went, no, right. In hindsight I wish I hadn't done this, but I did. I was like, I'm kind of putting you on notice that things

aren't perfect here, right.

So I had a week of vacation coming like the day after that or something or whatever. Bob said, hey, we should talk about that. I said, no problem. We can talk about it any time you want. I went on my vacation. It never got talked about before that. It might have been a day or something in between, I don't remember. I came back and, of course, Bob had told Stockton which, of course, I knew was going to happen, right.

And so Stockton -- I got back and the first day I saw Stockton he said, let's go to lunch. I knew exactly what we were going to discuss, right. So we go to lunch, and we sit down, and he small talks for a second, and then he says, okay, well, what's your long-term plans? I said, well, you know, I'm kind of a direct guy and I don't beat around the bush as well as I wish I could. So I just hit him with it. I said, listen, dude, I'm probably going to leave. You know, he's like, well, why? He's like -- because I'm fighting you every day. I'm tired of fighting with you. And I -- and it's like, you know, it's hard to fight with you. I don't agree with a lot of your decisions. I go, I said, you know, I don't -- you didn't give me -- I used as many things as I could think of, right. He didn't give me my bonus the prior year, right. And I had taken a big pay cut to come there, you know, thinking that there was a business opportunity, and I was going to lead the company and all this stuff. And obviously none of that was happening. So -- and there was -- financially

the company wasn't doing well. So there was, you know, any stock options weren't going to go anywhere. So I basically told him like, listen, you didn't even give me my bonus last year. I've been doing a fantastic job for this company and, you know, leading this team. I've turned your whole company around, got an engineering team that you can rely on now, all these things. You've got documentation you can go back and figure it all out, what we did. It's all documented. It's all stored in the cloud where you can go find it, all these things, and you didn't even give me my bonus. I'm like, what are you thinking?

You know, anyways, he didn't never address the financial issues or anything, but basically it was like I'm tired of fighting with you is the main gist.

So eventually that, you know, he kind of tried to counter that with, well, we've got all kinds of opportunity. We're going to build, you know, he had all kinds of plans. We're going to build lots of *Titans*. We're going to build habitats under water out of carbon fiber, all these crazy ideas that I knew were not going to really ever come out.

So, you know, basically at the end of the conversation, we made small talk. You know, we did some small chatting again and, you know, he kind of -- it was all good, you know, had a happy kind of smile, finished our lunch. We went back, and he said thank you for being honest with him, all these things. This was like April-ish timeframe ballpark. It might be off by a month or

two or a month either way.

So, next day there's a board meeting. I was presented at the board meetings, and I had -- we had made a huge amount of progress because the -- that was the timeframe when we were getting ready to ship almost, right. Things were getting completed. Sub pieces were going on. Like the thing's starting to look like a sub again instead of a bunch of parts sitting on the ground.

So I had 10 slides or something to present to the board which is what I would normally do but I mean not that many, but I had a lot of progress to show. He took my slide bag, trashed it, you know, put two slides up there that made no sense, didn't even, didn't even let me show the progress on the sub. Like this is something the board would want to see, and he was a jerk to me. I says, oh, I figured I knew what was going on, you know what I mean. I'm like, oh, okay. Yesterday we had this conversation. Today you're pissed at me and you're all upset. And now, now I'm getting the ratifications of my screw up for basically telling you the truth.

So I kind of regretted doing that, but that was kind of what happened. That was in April. His last question to me before the kind of lunch kind of ended was are you going to make it through *Titanic*? I didn't have another job scheduled. He thought I did. He thought I was going to back to Oceaneering. I didn't have anything scheduled. I hadn't interviewed at all. I was kind of putting him on notice that, dude, like if we don't -- if something

doesn't change here, it's not a long-term relationship that's going to hold me. So we go to *Titan*. So I told him, yeah, I'm going to make it to *Titanic*. I'm not going to let you just -- you know, I'm not going to go 2 years or, you know, 11 -- you know, a month short or something and not go to the *Titanic* and leave you hanging, like when I leave the whole team. So, we went to the *Titanic*. At the end of *Titanic*, you know, I mean I would call it a struggle but a success, you know. Had multiple dives that got to the *Titanic*, fulfilled our requirements to I don't know how many but, you know, eight passengers or something like -- 8 paying customers got what they actually paid for, maybe, something like that, right. A bunch back customers that never got what -- never, you know, for years hadn't got what they paid for, got what they paid for. And, you know, we struggled, which I'm not surprised. But we -- it was kind of a success in my mind, came back.

Well, before we were even off the ship, Stockton wanted to have a debrief with every person, right. So what went good? What went bad? What did you think? All these things. What he thought he knew. So mine was the last one. Mine -- I -- so we sit down together, and he's like. Okay. Well, okay. Well, obviously you know how to leave a team and thanks for your help, all these kind of things. And I said, okay, great. And I don't remember what else he told me but basically at some point, and I like reminded him that, you know, if you're not going to take care of me, you know, we've now achieved the goal of the company, that the company

couldn't achieve for 5 years prior to me getting here and had failed multiple times to go, and getting sued and all that stuff. We now have achieved the goal 2 1/2 years after I showed up. I had a lot to do with that. If you want me to continue on, things are going to have to change and, you know, there's some financial stuff that's got to happen. And, you know, he said, oh, I forgot about that. You know, we hadn't had a single talk about it since my April meeting. Now, we're in August or September, September I guess.

So anyways, we get back to the office. Nothing more was said. We get back to the office, he takes me to lunch and says, hey, how about -- we don't have any money. We, you know, we're getting sued by all these passengers that didn't get their trip. So even for this year -- that -- our year, not every dive happened. Not every passenger got to get to the bottom. So, you know, some of them were going to. I don't know if they actually sued. I never really knew what was going on with that, but you hear these things, right. You hear so and so was suing. I don't know if they actually sued.

But anyways, bottom line is, he took me to lunch. He said -- or coffee or something and said, hey, you know, why won't we talk about your raise next year, about a year from now, because we'll be in a lot better financial position in a year. And I'm like, dude, how do you think that's going to work for me? Like really. You're basically asking me to hang on for a year, fight with you

for another year and there's nothing really in it for me, you know, all this stuff. So anyways, I basically said I didn't think that was going to work for me. Again, hadn't started looking for a job, you know, but I was kind of playing hardball. It's probably not the best game to be playing. I was naïve in what I was doing to be honest with you. I shouldn't have -- I should have known more about where this was going to end up, you what I mean. That some egos were going to messed up, and I was going to get fired. I should have saw that coming, but I didn't. I was kind of just like, you know. And I, you know, I wasn't -- I didn't never think I'd get fired, but I also didn't mind leaving, you know what I mean. I just didn't have anything planned.

So anyways, down the line, it took him a while to ask me that, and I told him that I wasn't going to -- that I didn't think that that would work for me. He said, how about, how about the stock options, you know, kind of thing. I'm like, dude, you've already got a whole ton of stock out, but you've never told me what they're worth on any given day, and I've never been able to buy or sell. So like these things aren't worth anything as far as I know. And he kind of laughed and he goes, how about, how about we buy -- I'll set a day where we can buy or sell, anybody can buy and sell what they've got on a certain day of the year, and I'll just set prices. There's nothing that governs what the price is that I have to set. So I'll just set some prices. You can buy and sell. How do you think that's going to work for me? Do you

think I'm going to make a bunch of money that way, you know. Like if you're setting the price, something tells me I'm going to lose money on both sides. So anyways, he laughed and then we ended the meeting.

The next day he pulled me aside. He's like, hey, I want to talk to you for a minute. I'm like, okay. Do I need to grab my notebook? Because I would always grab my notebook before I would go talk to him so I could take notes or something. Anyway, I said -- he's like, nope, you don't need a notebook. And, he said -- so he takes me outside the front door and he said I'm letting you go because you never got vaccinated. Okay. And that's basically what I said. I said, okay, if that's what you want to do. Like I was, you know, not going to let him know I was surprised obviously. I was going to save face the best I could, right. I'm like, okay, if you think that's best thing for the business. Okay. I'll leave. And that was pretty much the end of it.

So that's how I got fired. So I don't believe that the vaccine had anything to do with it. The vaccine came up -- oh, also right after the vaccine conversation, and he fired me, he asked me if I wanted to contract for him. I said, well, wait a minute here. You just fired me because I'm, you know, I'm a crappy guy and I didn't get vaccinated, and it's not safe somehow. So, okay. What's -- how are you -- how am I going to contract with you? Like how's that going to work? Well, maybe you can work from home some and this and that. I'm like, no, I don't

think that's going to work out. So I just declined to sign any contracts with him or anything. That was what I believed, you know what I mean. I'm sure he said something post that. He gave me like 30 days or something to get out basically. A week and a half into that he told me I didn't need to come into the office any more. I said fine. And he had a going away party for me basically, gathered the shop people up in the shop, got me, you know, got a cake and lunch or something and gave me a little picture of the *Titanic* that we had taken on our mission, which I liked. Then he said good things, you know, in general. It wasn't a big speech or anything. It was pretty quiet because everybody what was going on. They all knew I was fired. There was no secret there. So, you know, I was feeling weird about it and I'm sure they were, but, you know, he said we couldn't have done it without you and I bit my tongue and thought you may never do it again. And that's pretty much what I thought but I kept my mouth shut luckily, and that was it. I never talked to him again.

Q. Okay. Thank you. My final question is, based off of everything that you know, what would you think would be a cause or a potential cause or potential causes for the implosion?

A. Okay. So I -- my opinion is, you know, we went to the *Titanic* when I was there. We had no noise on the hull. So I had no concern for noise or hull damage. And then what was done after that, I obviously wasn't a part of, but I heard things through the old team. I'm concerned about leaving the *Titan* outside. Again,

I can't verify, but my understanding is the *Titan* was left outside in the winter in St. John's where there's a lot of snow and ice. You know, we didn't -- I would have never been okay with that. The company had one mission. I'm going to try not to get too far off track here. The company had one mission. It was to dive to the *Titanic* with the mission specialists and collect money that way. Leaving the sub in St. John's like absolutely made no sense to me. You've got the sub. You've got a vehicle. You learned about its -- it's brand new. You learned about its problems on the first trip, right.

Now, you've got three big problems or three basic things you need to solve, right. Drop weights, batteries and one other, you know, whatever. I don't remember what the third one is, but there's -- you know, just pick your top three. The top two are easy, batteries, drop weights. If you fix those, you will have fixed 80 percent of time people spend on that stuff on the next trip. So in my mind, you bring the sub home. As soon as you're done with the last one, you have now a year or 9 months -- you've got 9 months to go fix those problems (indiscernible). And so that when you go out the next time, go find another three problems, but they'll be smaller problems and your team will be able to rest a little more and, you know, ultimately be more successful. More people will get to the *Titanic.*

But they didn't bring the *Titan* home. My understanding is they didn't bring it home at all -- after the second trip, they

didn't bring it home at all. So now they can't service it, hardly work on it, right, because it's in St. John's and they're in Everett. So, you know, that whole management of the sub gives me concern that they didn't put time into fixing things that they should have fixed. I talked about it being outside.

Another huge one in my mind is they dragged the *Titan* out to the site, so out to *Titanic.* This is what I'm told. I wasn't there. Dragged *Titan* out to the site behind the vessel on a 30 foot long platform, right. Now, the 30 foot long platform is a great idea in my opinion, if you're in a calm lake or in the Puget Sound when it's on a calm day. It actually allows you to go use a submarine without a big vessel with a crane and all that stuff. But when you're talking about open ocean, the thing's not designed as far as I know, to get pulled through open ocean for what I calculate is approximately 4,000 miles by the time you do 4 round trips and a fifth out which I think is when they had their problem. So you're talking ballpark, 4,000 miles going through the sea impacting the waves every 6 seconds or something. We didn't design that case. We didn't plan for that.

So I mean in my mind, you had a hull that on the first year, sounded and did not have sound issues. On the second year, I'm not sure. I wasn't there. You can look at logs or whatever. And on the -- and then -- but basically my understanding is they managed several dives to the *Titanic* safely and returned. And on the fifth year, they never got a single dive in -- or sorry, on

the third year, they never got a single dive in until their fifth trip which tells me the thing was not functioning because why didn't they even try for -- they didn't even get a single dive off the platform in five -- in four trips. Four sets of people, eight days each trip, and not one dive. Not one successful dive at least off the platform is my understanding. So that tells me that thing got beat up on the way out or wasn't maintained during the winter or had got damaged during the winter or something. And then they implode on the very first dive. To me it sounds like there was external force that worked on the sub in terms of an impact, multiple impacts on the way out there, 4,000 miles of rough seas. They had said that it was -- I saw this on some media from OceanGate, they had used the reason for why they didn't get any dives. They told -- they were saying that it's been the roughest weather in 4 years. I can't verify that but that's what they were saying, and they dragged the sub out there. That's like a, you know, it was an all stop kind of moment for me. Like, the sub is not made to be dragged 4,000 miles through the open ocean on a 30 foot platform that's literally got (indiscernible) board of 8 inches or something. It's like -- I think they mistreated the sub. I think something external happened. I don't know if they dropped with a crane. I don't know if it was the beating or the weather but, you know, in my mind it had a hull that was working and was quiet and then they imploded. So that's where -- that's the concerns I have.

Q. Okay. Thanks you so much for your time. I really appreciate it. That's all my questions.

A. It's all good. Thanks.

LCDR [redacted] Thank you, Ms. [redacted] Before I go over to the NTSB, we want to take a 10 minute break. Roughly, we'll get started at about 1500 Central Standard Time.

LT. [redacted] Recording paused.

LCDR [redacted] Thank you.

(Off the record.)

(On the record.)

BY MR. BARNUM:

Q. Dan, I appreciate it. This is Bart with the NTSB. Commander [redacted] and [redacted] already got most of my questions. I have mostly follow ups for you, sir.

A. Yep.

Q. So I may be bouncing all over the place. Sorry. First, I want to follow up on Commander [redacted] her last line of questioning, about some of the causes, what you thought might have been the cause of failure. You mentioned external forces on the hull. Just help me understand that. Like what kind of forces would that be? Like, you know, waves hitting it. Like is it actually damaging the carbon fiber or what's happening with external forces.

A. Yeah, I'm just thinking of anything that can cause kind of an impact to the sub and where I think that might have happened.

Like, you know, just pure speculation would be, you know, they moved it by crane and dropped it hard, right.

Q. Okay.

A. It got an impact kind of force. I have no idea if that happened, but these are some of the things I wonder about that, you know, when you go from a good hull to a bad hull, unless you see some kind of -- we should see kind of sound, strain track record, you know what I mean. And if you have no track record and you went from good to bad in a dive essentially, then you have to expect some external force acted on it, you know what I mean. So that's where I'm coming from. So I think that could happen like a drop, a crane, you know, drop it from the crane by a foot, maybe it didn't hold, you know, the thing didn't fall apart or hurt anybody but, you know, like, you know, had undue strain.

But more likely, is I know it was left outside or I believe it was left outside. I don't know. I wasn't there. So I don't know for a fact, but my understanding it was left outside in St. John's. I don't know if water got between the carbon and the titanium and froze or cycled temperature too much or something like that. I don't know. I just know that that's not how we should have been storing it. You know, it's an expensive, you know, millions of dollars of vehicle that goes subsea. It's not made to sit in the snow for a whole season, right.

And about my, you know, kind of my personal opinion is, the biggest impacts on the joints of that thing are the banging

through the waves for what I estimate is 4,000 miles by --

Q. Right.

A. -- by the time you line up, you know, a ballpark of four trips out and back plus a final trip out, right. You know, we're talking about like every 6 seconds you're going to be hit on a wave. Maybe one day it's calm, but that's not the way OceanGate was advertising the trip. They were saying that it was the worst weather on the *Titanic* and they were using for an excuse of why they didn't get any dives in. You know, my understanding from talking to the team or a few members of the team was they were really struggling to make the sub work and function, and they were having trouble and could not make a successful dive, and couldn't off the platform basically. They tried. In fact, I saw one YouTuber, you know, that posted from the trip, you know, and he got in the sub with a bunch of people to make a dive, but they couldn’t get something working. So they had to turn around, you know, they never got off the platform. They sunk it to 30 feet on the platform, raised it back up. So just looking at going from good to bad, if you don't have a track record of acoustic noise and -- or straining issues, then I don't believe it goes from good to bad with no cause, you know what I mean. So I'm looking for an external cause.

LCDR [redacted] Bart, I think it might be helpful if Dan explains to you how they got it to location when he was at OceanGate on a particular type of vessel as opposed to what his

understanding is as to how it got to location when it was dragged on the skiff.

MR. BARNUM: Sure.

BY MR. BARNUM:

Q. We are somewhat familiar with that but, yeah, if you could explain in your words, it would be great. Thank you.

A. Yeah. When I was there, we, for 2021 mission, we put the -- we hired and oil and gas services vessel, a great vessel, really nice, 300 foot ballpark long or meter ship kind of thing with a couple of cranes on it. We had a custom ramp built that would go from the back deck which was an open back deck of the ship without like a stern wall, that we had the ramp that could go from the deck of the ship down into the water.

And so we put the -- we put *Titan* on the -- well, we loaded *Titan* initially by craning it onto the ship from the port. So we craned the platform onto the ship first. We assembled the platform because the platform could be separated into two big pieces so it could shipped via 18 wheeler. We assembled those two pieces onto the -- on the deck of the ship after craning them on with the crane from the harbor dock. Then we lifted *Titan* using the lift pad eyes and a slip up onto the deck and landed it onto the platform on the deck. That's how it got from harbor side to on top of the platform the first time. And then once -- when we drove to site, we drove out with *Titan* on the, on the ship's deck, on its platform, right. So it's on the ship's deck. We worked on

it all the way in, all the way out, kind of stuff on a regular basis. It was pretty normal.

And then when we got there, we would launch the *Titan* down the ramp. It was still on its platform. We'd launch the ramp [sic] and *Titan* as a unit down the ramp and into the water as gently as possible, slide it off the deck or slide it off the ramp into the water. There would be a boat that would receive it back there, and then we would, you know, proceed with the dive stuff.

So it went in and out on a 100 foot long ship, you know, where we could have people working on it and tending it and, you know, maintenance, whatever it needed all the time.

You know, the problem with dragging the thing behind the vessel, is how, you know, nobody can be working on it in the 2 days it basically takes -- or day and a half it takes to get from St. John's to *Titanic*. No one can work on it while you're underway, while it's dragging behind the boat. You're taking all these impacts. So you're going to get out there with probably a lot of problems from stuff shaking around and getting beat up. I know from my oil and gas experience, when you ship a ROV or a ROV skid or tool from Houston to Fauchon (ph.), the very first thing that happens when you get to the ship is what they call a wrench party because every fitting on that thing is loose and rattling around, right. So, you know, it's like you're just going to have start with your wrench party essentially and figure out all the problems that are now arisen in the sub, probably connectors that

have, you know, interior connectors that maybe aren't fitted just right anymore. You know, whatever you can think of.

Q. Yeah.

A. Like (indiscernible) step up, and that's a pretty big beating 2 days straight. And then you're onsite now, how are you going to work on this thing. If it's calm, you can put somebody on it, but there's not a lot of room on the platform. So it's pretty hard to work on. I remember telling Stockton because he had this idea when I was there, and I just kept pushing back, we're not doing this. This is kind of like an all stop. We're not doing this. No one can work on the sub safely out there, 300 miles offshore, you know, on this little platform. How are we going to remove a fairing to even get to the equipment underneath because, you know, that's like a two to three person job, you know, I'd say three person job to get a fairing off. Somebody up on top of the sub to loosen the bolts and two people on the side to kind of receive the thing as it falls down, you know. How are you going to do that on a platform pitching in the waves? If you can't do that, you can't do much, right. How are you going to charge the sub with 240 volt batteries when you're sitting with the, you know, sitting in the open waves? Are you going to stretch the cable across from the boat to the platform? That's what Stockton always wanted to do. I again fought back on all that.

And then there's one other thing I was thinking about. The house batteries. The house batteries have to be charged. They're

inside the sub. They're like lead acid -- or maybe not lead acid. I don't remember but they're basically big RV type batteries that are inside the hull, right, in the passenger compartment where the -- that power all the lights and all the internals and like the external lights and a couple things, right. To charge those, you have to have the dome open. So now you're sitting in the open sea with the dome open pitching around in waves. I know. It's sounds like a disaster.

Q. Yes. Thank you. We've heard from a couple people who indicated the sub was designed to be towed. I take it from your testimony you wouldn't agree with that or --

A. No. I would not agree with that.

Q. Okay.

A. I will say this. Stockton thought the sub and the platform were inseparable, and he, you know, he was very passionate about that. Let me put it that way. I would not agree with that. I don't think it was a good plan.

Q. All right. Just clarification. We were talking about the weld of pad eyes onto the collars. Was that done after it was assembled or before?

A. Before.

Q. It wasn't glued together and then pad eyes welded.

A. Correct.

Q. The pad eyes were welded before the glue.

A. Correct, yep.

Q. All right.
A. Though --
Q. Go ahead, please.
A. I'm sorry I interrupted.
Q. Okay. Like I said, I'm jumping around. I was just curious. I had written this note down earlier. You said you never dove on *Titan*. Was there a reason why you never dove on *Titan?*
A. Well, a couple reason. One, I hated the fact that people got bolted in. It just felt wrong to me. Two, I didn't trust Stockton's decision making, and so I didn't really want to be in a sub with him that I was bolted in, not that I thought he was going to go insane or anything like that. I just thought he made bad decisions and bad decisions could result in bad outcomes, you know what I mean. So, it wasn't that I thought he was going to wig out in the sub or something. It was just I didn't trust him. So I didn't ever push to get in the sub and I was never, you know, I was asked one time if I wanted to get in the sub. It was on a *Titanic* trip. It was back in like Bay of Bulls or something like that, and it was a bogus dive to -- like where people hadn't got their, you know, we hadn't had any successful dives to *Titanic* yet. We might have got to depth. I don't remember. We had any success with one where we cruised around the *Titanic* at will, okay, kind of thing. And I don't remember if Stockton trying to give people an opportunity or test the sub or what, but we stopped in like Bay of Bulls or something outside of St. John's and, you

know, ballpark 300 meters of water or less. It might have been 100 meters. I don't remember, and he was going to do a dive, but then he said, do you want to get in the sub? And I said, no, I don't want to get into that sub on this one. Like there's zero benefit. I'm already been a technical diver. I've been to 300 feet like -- I don't need to get sub today.

So -- but I would not say that I would never get in the sub. I didn't, you know, I didn't -- if a different pilot was piloting, you know, like Kenny or Scott Griffith, I would have felt a lot more comfortable. And if there was something to gain, and I don't mean like financial, I mean just like -- I don't need to see the bottom where there's nothing to see, you know. I've done all that scuba diving, you know. I want -- if I had had the opportunity to go see the *Titanic* I would have probably made the decision to go so I could say I saw it. So I wasn't like totally opposed to ever getting in the sub, but I was not pushing my way in the sub either. It's like, you know, you'd think in my position, I could have forced my way in. Maybe I could have, but I was never asked, and I didn't force.

Q. Okay. A little here about the production of the hull. One outlying question I had was you said you did the multi-cure in 1 inch segments. Was there any adhesive applied between each segment? And what was that?

A. There's something called a peel ply in between each 1 inch laminate. So, yes. The answer's yes, and it's called peel ply.

I don’t know --
Q. Peel ply.
A. Yeah, peel ply. It's a standard thing in the industry. I don't know the spec (ph.) of the one we used but again, it'll all be in documentation somewhere at OceanGate.
Q. Okay. All right. The testing of the Deep Ocean Test Facility, was there any other -- was there ever any talk of going deeper or further than 4200 meters? I mean -- yeah. Any talk about going deeper?
A. At the facility or prior or --
Q. Yeah, just, you know, you're at the facility. You're testing this unit. You know you want to dive to 38, 50, and you guys went to I think 42 at the facility. Any talk of going to 6,000, testing it to 6,000?
A. No, we knew it would not survive a 6,000 meter dive. We didn't know exactly where the limit would be and, you know, the goal wasn't to find the limit. The goal was to make sure we had a safe hull to 3750, right. So we picked 4200 or whatever it was based on some safety factor level over the 3250 which was, you know, 1.2 or something like that which was on the very low side of what industry would kind of accept. So if you look through like ABS, DNB, Lloyds, it's the Russian agency and Japan agency, you find rating, you know, overages from anything from 1.25 I want to say, maybe 1.2, I don't remember exactly, to like 1.7 maybe or maybe 1.5. You can look these things up. But basically there's a

range and depending on which agency you would pick to get certified through, you know, you would use their number. So we didn't have an agency certifying us, but we picked a number that was on the low end of what those guys were kind of doing.

Q. Okay. You mentioned that you knew or when you tested one-third scale models for failure, you knew that the failure wasn't in the glue. How did you guys determine that?

A. You could see the failure in the -- we could see the failure in the hull. The hulls didn't -- like at least the two I was there for, the hulls were still intact largely. They weren't little pieces in the tank. And so you could see the failure in the carbon fiber. It was right along the wrinkle.

Q. Okay. Talking about the FEA, HyperSizer I believe was the name of the company with the software.

A. Yeah.

Q. Is that the same as we've seen Collier's? Is that also --

A. Yeah.

Q. It's the same.

A. Yep, HyperSizer might be the name of the software. I don't remember. And Collier might be the name of the business. Yeah, you're bringing something new to mind that I hadn't thought about in a long time. But, yeah, the Collier name is associated with the HyperSizer.

Q. Okay. Back to the gluing. Sorry, I am jumping around. When you glued the segments to hull, you were telling us that spacers

were used to ensure proper spacing. Was there any thought of or what did you guys do to mitigate any air entrapment within that joint?

A. Well, the first thing is we overfilled everything, so everything would get squished out, right. So we overfilled all the joints, you know, so that it would -- so glue would have to come out and push in. I think that was the only thing we did. That's all I can recall.

Q. Okay. And then, when you reused the segments in the dome, you were explaining to us the process of machining out the old carbon fiber and then you said they skimmed the titanium. How much -- and they actually had to take off some titanium material as well. Is that correct?

A. I think so.

Q. Was that, was that process done after the new hull was made or before?

A. That would have been done before/while the new hull was being made, you know what I mean. So while the carbon's being laid up, I don't remember the exact timeline for everything, but while the carbon -- the long pull in the assembly process is building the hull at least from some of the processes I had, right. If you had to add in carbon domes or something to it --

Q. Yeah.

A. -- that could be a different time schedule, right, but a long thing for me, the biggest hurdle was the hull build in terms of a

timeline pit, right. So while the hull was being built, I'm also doing everything else I can do to make the sub ready so that when the hull's done, I can just start assembling, right. So that's the drop weight changes, you know, every sub system junction box. Every sub system that I have permission to change, I'm making those changes. The junctions boxes were all replaced, you know, BBT boxes replaced. All these things. The dome prep, all that stuff, was happening during the, you know, I want to say 3 or more months, maybe 6 months. I don't remember the hull build. Probably not quite that long. I don't remember. Probably a good three months though, we worked on the hull build, you know, but I was doing all this other stuff in parallel.

Q. So how was that tolerance taken into account. Did they make the hull diameter larger because you machined some material off the titanium segments?

A. I don't recall, but what I do recall is taking measurements of everything before we glued it, so that we would know all the measurements. I don't recall what the exact -- I don't recall -- my guess is we took, you know, 3 of 6/1000ths, something like that, off of the titanium and I -- my assumption is that's probably negligible, but what I do think was taken into account is after that was off, and we had to glue it back on, you know, it's super important that the machining of the hull matches up to the size that you currently have, right of the titanium because the titanium's not changing and the hull has to fit at the end, right.

So when the Janicki machining was done, the ends were cut off and the milling was done to get the final size, that was taken into account then --

Q. Gotcha.

A. -- to make sure that the tolerancing was the same as it had been in the past.

Q. Okay. Even with the machining of the titanium.

A. Yeah.

Q. Okay.

A. I believe so. It's been a while. As I'm talking, I'm trying -- I'm remembering these things but, yes, that's what I think.

Q. Okay.

A. I also think that right before we glued it, I think we measured everything and probably wrote it all down. I kind of think it's in the procedure that you guys gave me, you know, in this binder. I'd have to go read line-by-line, but I think there's spots in there that says measure this and enter it here, you know, so we'd know what we had as we go.

Q. NDT, you were talking about that earlier. You said you contacted a former colleague at BP. Who was that?

A. His name is Danny Keeck, K-e-e-c-k.

Q. Okay. Did he produce a report?

A. I do not recall a report. My guess is for sure probably an email at least. He may have produced a couple pager report. I just -- I don't remember. You know, I don't remember if we just

talked about it on the phone. He probably at least followed up with an email. I don't remember for sure, but I don't recall a report but I don't remember is the bottom line.

Q. Okay.

A. The same thing, the same thing with Mistross. I did the same thing with Mistross. Sent them some stuff, asked them to analyze it. Said they couldn't do it, didn't have a technique, and again I don't remember if they gave me a report or just sent an email or called me on the phone or all the above. I don't remember but we paid for that in both cases.

Q. Okay. I want to talk a little bit about the viewport. You mentioned it earlier, how you got a new one made. Did that come with a lifecycle? I know we were talking about lifecycle as far as the hull earlier, but how about the viewport? Was that ever considered lifecycle or not?

A. Yeah, I want to say that the viewport lifecycle is dictated by the PBHO manual, something like that, and there are lifecycles. So then if you use like an ABS cert or anything, then they all have lifecycles, for how often you've got to replace all the windows, like Stockton didn't do this because of the -- he had an ABS class sub. So that had windows that needed to be replaced, and they recently replaced them is my understanding. I wasn't there for that, but my understanding is they replaced them and it could be certed again. So I believe they have lifecycles on them, but those lifecycles, I'm not sure if they're dictated by the

manufacturer or if they're dictated by the, you know, classification agencies.

Q. Okay. And obviously this sub wasn't classed --

A. No.

Q. -- to follow PBHO, but you said it was the same manufacturer, Hydrospace made both windows?

A. I don't recall the manufacturer. I did think it was the same manufacturer but I can't remember if that's the right name or not. It doesn't -- if you had said is that the right name, I would have thought no, but I'm not sure. But my understanding was the same manufacturer. We bought -- we used the original drawing. So my team didn't engineer the viewport at all. We already had it when I got there. They had a drawing. I checked to make sure that drawing was the right (indiscernible), and that's what Stockton wanted to order when we were going to order it to make sure that we didn't order the wrong part. And then, the part was ordered.

Q. And so it was the same window. It was an identical window as the one that was engineered for *Titan I*.

A. We used the same drawing, yeah.

Q. Okay. All right. And, there were a few numbers thrown around. What was the depth rating on that window?

A. I don't remember. I do not remember what the depth rating is. I don't -- oh, yeah. I've heard that things were not done properly there. That surprised me when I heard that in the media. I don't believe that's the case, but I don't remember the exact

depth rating. I would have said 4200 or 4,000 meters or something like that. The only reason I question that at all is because I've seen in the media that that was supposedly not the case. I don't think -- I would have never signed off if I had know for sure that we were buying something that was not rated for the depth we were going to, if that makes -- and I didn't sign off on everything like that, but I would have never supported it, you know what I mean. And it would have been something that stuck in my memory. So I don't -- I would have written it down somewhere I think if that was the case, but I don't believe so.

Q. Okay. Talking about test dives, following the Deep Ocean Test Facility. Was there any discussion about doing unmanned dives?

A. No. So that was something the former team had done to subvert going to the -- the process of going to the test facility itself. It saved money and supposedly time. It certainly wasn't any faster and 100 percent wasn't going to be any cheaper. But that was the perception, and so they took it to the Bahamas and then they did some unmanned dives. I was looking through the log, you know, that you guys provided, and I saw, you know, it's just refreshing my memory about some of these things, and I know they have several unmanned dives. My understanding was, again I wasn't there for any of these things, but they had no idea the depth that it went to on the unmanned dives. The figured out the depth by paying out the "X" amount of cable, you know, fishing line that

they had the sub hooked to so they could find it and bring it back, but they had no idea how deep it went. The instruments didn't work at least on the deep one. At least on the 4,000 meter dive, the instruments I was told didn't work. They didn't collect any depth recording, and they had no idea what depth it finally made it to.

Q. Okay. So, look at the dive log, there was one, and I guess Stockton did one dive prior to having mission specialists on board. Is that your recollection as well?

A. That I don't know for sure. If there was a dive log, you can probably figure it out.

UNIDENTIFIED SPEAKER: It should be about document 50-ish.

MR. SCOVILLE: Well, 50 is -- okay.

UNIDENTIFIED SPEAKER: The next one is where it started.

MR. SCOVILLE: Okay. It's the next page. So -- okay. Let me look at this one second. So you've got dive 49, right. That's 8/7/19. That's Everett Marina, Kenny Haig, Scott Griffith, Nick Nelson, that's your Nick guy you were wondering about I believe, right. Chris Howard. That would have been a dock dive. I am not sure that that was -- oh, here. I like this. Aborted due to insert movement on descent of platform. So the way they had designed the interior is the interior was not connected to anything, and the entire interior of the sub was free to move when the sub made a tilt. And so these guys went for a dock dive. They forgot to put the 2x4 in that Stockton used to block the hull

so it can't move, and then the whole insert shifted, and it's yanked on like the mattocks (ph.), you know, plumbing, and the electrical plumbing. So as soon as that happened, you know, and luckily no one was hurt, but as soon as that happened, they said bring us up. We immediately brought them up. So that dive was probably like -- well, it says .1. I don't know what that .1 is an hour.

BY MR. BARNUM:

Q. I guess I should clarify it. Sorry, Dan. To dive to the depth, prior to paying -- having mission specialist on board.

A. Okay.

UNIDENTIFIED SPEAKER: 61 starts that.

MR. SCOVILLE: Okay. Well, yeah. We can kind of get there but let's keep going through here. So if you look at like 53, right, again it's not a deep dive. It's in the Puget Sound, but that's Josh Gates and Brian Weed. I think Josh Gates is a TV personality, and I think that was like a -- so he's not -- I don't know if you want to call him a mission specialist or perspective mission specialist, entertainer who Stockton's trying to get publicity from. I don't know. But he's not a, he's not an employee. Neither is Brian Weed.

Then you've got 54, Conrad Herrmann. I don't know who Conrad is. Herrmann, Herrmann. So need additional marina dive because -- to diagnose thruster drop out, scrubber flow inadequate. That's a problem I talked about in the past.

Okay. And moving on, Joe W. I don't know who Joe W. is but I think it's Joe Warton (ph.). That's a mission specialist, if I've got the name right. He went on my *Titanic* mission. So this would have been like a -- Stockton would like to do a -- he would like to collect somebody's deposit, right, for the trip, and to do that, he would say, fly into Everett. We're going to take you for a dive in our sub locally. That'll get you familiar with us and our team and how we operate, and get you excited about the experience. And then essentially, you know, you can make you decision whether you're going to drop your money, you know, your going to go on the big trip and spend all the money or whatever.

I'm not sure. Some of those I think were like, hey, show up and do all this. We'll do it for free, and then you can decide, and they other ones were pay your deposit and then this is part of the process. So I'm not sure, for sure, which went first on a more often basis, and I think it was done multiple ways depending on the person, and the situation, but he is -- he ended up going on the *Titanic* mission that I was on, and I believe he went to the *Titanic* mission.

Q. Okay.

UNIDENTIFIED SPEAKER: Hold on. Bart is there anyone in particular because I think Dan's just going to go through all of them. Is there any one in particular you wanted Dan to address?

MR. BARNUM: I just wanted Dan to clarify that there was just one dive.

BY MR. BARNUM:

Q. Well, how many dives was there to the *Titanic* depth without a mission specialist on board?

A. Oh, yeah.

Q. Prior to the first mission specialist.

A. Let me look, but I'm thinking -- I don't think any. I don't know how that -- so you're looking at -- like if you look at 61, right, that's the first *Titanic* dive. Kenny Rush or Stockton, Kenny, Gary Filbrick (ph.), Renada (ph.), PH. Two of those were mission specialists. One of them's an industry expert, and then you've got Kenny and Stockton, right.

Q. Okay. What about 63? They made a *Titanic* dive, but there's no mission specialists on.

A. Okay. So, my guess is there they were -- we were struggling it looks like, you know, DBL failure, a drop weight failure. Oh, no, that says drop weight good on 63. What about 62? Lost thrusters on 62. 61 was a DBL failure, and I think that's our first one, right. So we're working on problems with the sub, and so at some point, Stockton just said, okay, we're just going to go for a dive with the, you know, with the experts, you know, him and Scott and PH. PH is not a company employee, but he's, you know, a globally known international sub expert. So.

Q. Okay. All right. Just a couple more questions here for you, Dan. The part of that dive log that we received, also has a preventative maintenance tab. And some other vehicle data and

maintenance on it. Is this a document that you kind of controlled and added to? Who made the entries on this document?

A. Okay. At times when I first got there, I would make entries on this thing. Eventually, you know, Stockton was really never happy no matter what. I don't know. It was a real struggle to fill this out in a way that made Stockton happy. Any given day we were doing it wrong. So at some point he decided it was just going to be one person filling it out essentially and that was going to be the -- I believe it was Kenny Haig. So, I, you know, it was hard to please him on this, but -- and I wouldn't say this is complete by, you know, like my opinion is like, yes, some stuff got written down and it's a good attempt, and it's probably relatively accurate, but it's not complete, you know what I mean.

Like, you know, we built a whole new *Titan* here, right. Where's, you know, I don't know where this starts, 2018. So I wasn't there for that. 2018, 2019. So early 2019 is like four or five pages in.

Q. Was there anywhere else where you were tracking work that you performed on the sub and your team or just --

A. Not in terms of a dive log. What I was doing was tracking, you know, engineering drawings, right. So my team, you know, our output in my opinion for anything was like three things. I would tell Stockton or Bob like, you should ask three things from my team for any concept. What's it look like? Give me a concept drawing. How much is it going to cost me? You know, give me an

estimate. And how -- can you get it done in time? Those are the only three things you need to know to make a decision, you know what I mean. Like, you know, I mean there's some -- I'm going to have to explain the engineering science behind it obviously, right, but those are the three things. I was like -- so those are the kind of things we tended to produce.

And then, from there, if we got the approval to do a project, we would produce engineering drawings, build materials, all that kind of stuff for the project, right. And then depending on what it was, we might, we might produce a -- here's how you assemble it document or drawings, you know what I mean. Like my preference is to do that stuff in the CAD so it's all released and no hard to find later because it was just like a Word document, you'd never find it. If it's in your CAD system, then like if you go by the drawing and you find the assembly instructions. Like, for example, you could find one of those if you looked at the drop weight box that we -- that my team designed versus, you know, not the original that the old team designed that was made out of the electronic enclosure from DigiKey. You know, the engineered one, that one will be in the CAD system and have assembly instructions with it.

Q. How about preventative maintenance? Would that be just kept on here or is that something under your purview as well?

A. It would have been kept on here.

Q. Okay.

A. Yep.
Q. All right. So, one follow-on question. I swear it's one of my last ones, but you had mentioned earlier, we were talking about the *Titan I* and the initial support vessel that was coming up from oil field. And then you said the -- there was a letter from the Canadian Coast Guard saying it was okay to go up. Did I hear that correctly or what was -- could you talk a little bit about that?
A. And I might have said it wrong, I don't know. But, the -- my -- there was a letter from the Canadian Government somewhere, I don't know what body, that said, hey, this should be okay, you know what I mean. But like I remember the conversation around that letter was is this, is this a get out of jail free card or not, and nobody was sure, you know what I mean. So no one was sure that that letter was going to stand up when we got there and somebody tried to arrest the ship in port or something, right. I'm sorry if I'm using the wrong terminology for the Coast Guard guys.

Like this is my understanding. Somebody could capture that thing and say, nope, it's not going anywhere, and we weren't sure that that letter would stand up. But there was a letter like where Stockton or the, you know, somebody on Stockton's team outside of engineering and ops had gone to the Coast Guard -- or sorry. Gone to a Canadian Government body and said, hey, this is what we want to do. Are we going to be okay? And, they -- basically the answer was yes, it seemed okay.

Q. Okay.
A. Nobody was sure that was going to stand up and keep us from having a problem when we got there with the ship.
Q. And the last one. You were talking about you'd go to the board of directors' meetings often, and that there -- one of the board members was a retired U.S. Coast Guardsman. I don't know if it was admiral or captain. What kind of interactions would Stockton have with him and what kind of feedback were you receiving from that board member in particular? Was it operational-wise or what kind of expertise was he bringing to the board?
A. Okay. I mean -- let me back up in time a bit. I would go to the board meetings pretty much quarterly, probably every quarter from when I started until when I left. I would present engineering and solutions, improvements, concepts. This is the direction I want to go with the team. This is the progress we've made since the last time, kind of slides and discussion. The board would listen to my comments. Occasionally I would get positive feedback, you know, head nods, you know, just in general positive. You know, occasionally a comment, I like what you're doing here. So generally positive stuff. I don't think I ever got any redirection or negative comments from the board directly. And so, you know, my relationship with them was pretty business and I didn't -- they didn't give me a lot of feedback.
I did have a couple feedbacks where they told me -- I had two

indirect feedbacks from them I would say during my time there where Bob Shuman called me up and told me, hey, Admiral Lockwood, I just got off the phone with him, and he told me that this is the first -- the best board meeting he's ever been to at OceanGate because the engineering team actually knows what they're doing now. So that was, that was -- I took that as high praise coming from a Coast Guard admiral and just this guy in general. Any board member that said to me, which was only him, I would have taken it as high praise from, but as a Coast Guard admiral, I took that as really high praise.

And then as far as the other feedback I got was Mike Furlotti, again indirect. I believe it came from Bob Shuman to me that Mike Furlotti was happy because it was the first time the engineering team seemed to have any clue about the AE system he designed.

So those are the two real direct, you know, indirect feedbacks I got that were really positive. I don't think I ever got any direct feedback or indirect feedback that I had screwed up or anything was negative. Generally the board did not give me direct feedback. I got all my feedback through Stockton and stuff like that.

Q. Okay. Would you stay at the board meetings for their entirety though? Would you hear other topics or just yours?

A. You know, for a few hours. I would typically be there for the whole thing. There might have been one or two where they

asked me to leave or there was something else going on and I left early, but generally I was there for all the board meeting.

After the board meeting, there would be -- I don't remember what they called it, but they called it something else, and there was another meeting that always followed directly after the board meeting. I was never present at one of those. I don't know what happened at them. You know, my assumption is the board talked about important topics without any of the, you know, other people being there, myself or Bob Shuman being there. I wasn't present for any of those and never, you know, I don't recall any direct feedback from those that was positive or negative or every felt like the board members said I had to do X or Y.

Q. Okay. Was there ever any talk of operations in those board meetings with regard to having paying mission specialists on board in areas of operation and being able to operate in certain areas, the US versus foreign waters?

A. I do not recall any discussions of having, you know, having mission specialists or people on board. I don't remember any of those. Like, it was a given. My feeling was this had been discussed long before I ever got to the company and, you know, this was the business model, to take people to the *Titanic* and collect money. So I don't feel like that topic, whether we should be doing this or not every came up in front of me.

The -- as far as were any operations topics ever discussed. I would say every board meeting had some operational discussions.

It just -- I don't think they were that type of discussion. They were like, here's what operations is doing. You know, at the beginning somebody else would present there.

And after probably year or something after I was there, Stockton told me I was now in charge of operations and engineering. I didn't actually want to do that. I had lots to do with engineering. I felt like the operations piece was kind of going to be a distraction. Scott Griffith was in charge of it at the time. I like Scott, you know. I didn't have any pleasure in taking his role for that for myself, you know. It turned out fine but I didn't really need the extra responsibility.

So I would then -- eventually after that happened, I would then also present on operations but, you know, it wasn't very exciting because we weren't really doing any operations, right. So when I got there. We were in the Bahamas about to go to *Titanic*, and then after a month, we were back in Everett or 6 weeks or something, we were back in Everett and there was really no ops going on, no real ops going on until *Titan* was done.

Now there was, you know, a caveat. There's always caveats to this stuff, right. There was a period of time where Stockton was like we're going to just dive our *Cyclops I* sub in the Sound locally, and I was like, you know, it was kind of whoa on engineering right when this all -- right when the crack happened because like, hey, we've got to regroup and figure this out. Where are we headed? Do we have money to built two subs that

Stockton said we were going to build, whatever? So there was a time where it was like, okay, we took up some time diving the *Cyclops I* in the Sound locally. I mean it was mostly just employees, pilot training, learning about the OceanGate. For me, it was learning about the OceanGate process of diving, you know, the point system and the anomalies and the strikes and, you know, just how we functioned. So I thought it was good for me.

I didn't report out on that much other than here's the problems. I probably summarized, right. We did five dives this month or in the last several, you know, whatever. In the last quarter, we did "X" amount of dives. We cycled this many people, mostly our employees, through the sub. We trained pilots, these two pilots, "X" amount of dives, and we had these problems. You know, here's our top problem. I remember making a parado (ph.) of what the top problems with, you know, what the top operational problems when we were diving in the Sound were.

And then on top of that, he went to, you know, Stockton took some people off New York to dive a couple of times. He called them Canyon -- some canyon -- Hudson Canyon dives is what he called them. You know, it was make money. They did not make any money. He just wanted to do something fun. So he went and did that with some people but I was not there. So I probably reported on those a couple of times, even though I wasn't there. Just gave the high level overview, you know what I mean.

Q. Sure.

A. But, most of my time was spent talking about engineering, showing slides of the concepts, showing slides of progress and generally I felt like I got a good reception but didn't get a lot of feedback.

Q. Okay. Perfect. Thank you, Dan. I appreciate it. That's all the questions I have. I believe someone else from NTSB might have a couple as well.

LCDR [redacted] Thank you, Mr. Barnum. Mr. Marcel or Mr. Kramer.

BY MR. MUISE:

Q. One follow up, Dan. Was there any talk at any time about adding a hull identification number or state registration number or any kind of serial number to these -- to either *Titan I* or *Titan II*?

A. I don't remember anything like that. I mean there was -- you know, we were at hull 1 of 1, you know, 1 of 2, if you want, but the first one was built in a completely different method with all different engineering and all that kind of stuff. So that was kind of like a hull 1 of 1 and the hull that I was involved with was like pretty much a 1 of 1 as well. So there was no discussions about serializing the hulls at that point.

Q. Okay. So as far as you know, there's no hull number stamped into the carbon fiber or the legs anywhere?

A. I don't believe. I will tell you no, if you asked me, you know, no.

Q. Okay. All right.
A. Very doubtful.
Q. That's fine. Thank you, sir. Again, thank you for your time.
MR. MUISE: Don, do you have anything?
DR. KRAMER: Yeah, I have a few questions.
BY DR. KRAMER:
Q. I just wanted to get kind of just some clarification on the design, on the design of the sub in terms of its strength. So, could you kind of reiterate I guess what the target depth was and what type of safety factoring you were shooting for at that depth?
A. I mean it was going to be approximately 4,000 meters ballpark. Again, I think I mentioned before, I don't remember if it was 42 or 41 or 4,000 but, you know, the goal was to go to *Titanic* is at 3850, right. And so that was our --
(Off the record.)
(On the record.)
BY DR. KRAMER:
A. -- and equipment, and they went and built us a full diameter, approximately 2 foot long by 2 inch thick layout.
Q. Okay.
A. I think they may have even done it with their own carbon fiber but they asked us to cure it at least. So we, I think, paid for the curing. We had to ship it down the road to Janicki to cure it, but it came back. We put the peel ply on, they laid up

another inch and we shipped it out and cured it again and then we cut it in half to see what the layers would look like. You know, did the peel ply, you know, kind of blend into this whole thing and form a nice, you know, nice layer or is there some inconsistency.

When we cut that in half, my recollection is it popped, meaning there was inner laminate stresses, and when you cut it -- that are released and all of a sudden you get this pop and like, you know, some layer in probably the middle layer, probably the center, but I don't remember, that some layer I think popped apart and then you've got this huge delam, you know, separation between two layers.

And, that was something that Stockton had learned early on somewhere or at least knew was a possibility from prior to me getting there. So he kind of knew that this was inner layer stress problem, and his solution was that he said, this is what fixes this problem is you've got to cut it with a single cut. You can't like machine it in passes. You can't go like take a 1/2 inch cut and then another 1/2 inch cut or like take a cutter bit like on lathe and slide across. You have to make the big initial cut with a single cut.

It ended up being, you know, I don't know where that came from but that's what we did on the final hull and it worked. We didn't get any pop delamination separation kind of stuff.

Q. Okay.

A. We had a single big, huge cutoff wheel on this big CNC saw.
Q. Gotcha. Okay. All right. So essentially you used your mandrel and then -- you used the OceanGate mandrel and then laid down a first 1 inch thick layer, cured it, repeat the process and then took that 2 foot long ring -- 2 inch thick, approximately 2 feet long, took that off the mandrel and then that was your test material.
A. Yeah, and we cured that as well, right.
Q. Yeah.
A. Yeah, so that's all correct. And then there was another piece we did after that. I believe -- again, I can't remember for sure, I'd have to look in some documentation, but I believe that that final part was 2 foot long again, full diameter, 2 foot long, 5 inches tall, but cured in all one shot, right. I think this was like Stockton trying to go back and cure in all one shot. And so that one came out with a great big wrinkle in it and, you know, again it was cured at Janicki, you know, down the road 2 hours, and came out with a big, huge wrinkle. We didn't -- I'm sure we cut it -- I think we cut it apart, you know, cut it, sliced it again probably to learn about again, try the single big saw deal. I can't remember for sure if that was done, but that's what I think we did. But we never hyperbaric tested the big ones because, you know, we'd have to have end caps and all that, that were sacrificable or, you know, like that.
Q. Right.

A. So we didn't test any of those that way. But.
Q. All right. Well, that will do it for me. Thank you very much.
A. Okay. Thanks.
LCDR [redacted] Thank you very much, Dr. Kramer. [redacted] any questions.
LCDR [redacted] I do.
BY LCDR [redacted]
Q. Hi, Dan.
A. Hey.
Q. Mine might be a little bit all over the place as well. Did you do any work with University of Washington, Applied Physics Lab?
A. Yeah. You know, what we did was we used their facility to do testing of the third pressure hull and I was told after I left, they did testing of the drop weight motor, the drop weight box motor. So they switched to a brushless DC motor which was the fix for this problem we had with this drop weight box. I was told they went back there and tested there. So we went -- while I was with them, we did -- we worked with them twice. It was rental of that facility basically --
Q. Okay.
A. -- to use their hyperbaric chamber.
Q. You didn't work with any of the Applied Physic Lab's employees that had worked at OceanGate or worked with OceanGate

before?
A. In my time, I did not. One guy showed up a couple of times while I was there. His -- his name's Dave something.
Q. Dave Dire (ph.).
A. Dave Dire. I mean he was a friend's of Stockton, an associate of Stockton's. Stockton liked him, you know, rated (ph.) him kind of, and said, hey, this guy's a good guy. I like working with him. He's helped us out before. You should use him, Dan. I'm kind of, okay, we'll use him and to be honest but, you know, he never worked out. Not for any negative reason on his side or anything, as far as I know, but he either didn't either respond that he was interested or didn't have time or didn't want to do it. I don't know exactly. I didn't like -- there was no hard push for me, from me. Of course, they're trying to get this guy hired. Stockton wasn't trying to hire him as a full -- well, I don't know about that. I think there was at one a potential of full-time hire, you know, like where Stockton was hoping to hire him. I think he said no. He had worked with OceanGate before. I think he kind of knew the drill. He never -- he was, you know, I want to say, you know, too much of a professional to like leap over, and he didn't wander. He may or may not have but he (indiscernible) he has to know. The only reason -- you know, kind of know what Stockton's like.
The only reason I even bring any of that up is because he came there one time and he looked at the sub and he just looked at

me, and he said, I cannot believe what you've accomplished. Which also I took as a huge compliment from this guy because he worked with Stockton before. He knew the drill. He had, you know, he didn't tell me he struggled, but I could -- like that comment made me feel like this guy gets the challenges and he is like totally blown away by what I've accomplished, and the different in the way the sub looked from *Titan I* to *Titan II*. So I took it as a huge compliment from him but he never came to work for me.

He did -- he gave me a book one time. Like I was struggling with -- remember I talked about the engineer who couldn't -- the mechanic who couldn't do the basic calculation on the, you know, table force and the legs, you know. You know, I complained to him about that one time, and he just happened to be in. Like I probably talked to this guy like 3 times in 3 years, right, or less than an hour at a time. And he said, Dan, let me get you textbook. It spells all that stuff and just give it to your guys. So, you know, buy this textbook. I bought it and I gave it to the guys, and it didn't do any good.

Q. All right. Do you know why OceanGate was formed in the first place? Like what the company vision was when Stockton and Guillermo formed it?

A. Not really. I could make some guesses, but I don't really know.

Q. Do you believe the company by being there a few years, do you think its purpose was oceanographic research, number 1?

A. I don't. Absolutely not.
Q. If it wasn't oceanographic research, what do you think the purpose of the company when you worked there was for?
A. My personal opinion is it was all about Stockton's ego. He didn't -- so he told me straight up, he didn't care about the customers one day. Like this was not in my earliest days. I was having an argument with him, about some design feature. I don't remember what it was. He said what -- and I said, well -- he said I don't care about that, whatever it was. And I said, well, the customers are going to care. And he said I don't care about the customers. And I'm like we're doomed, you know, that was like my feeling. We doomed.

But anyways, my personal opinion this is all about Stockton's hobby, having a good time, being able to, being able to go do some cool stuff, you know, go to the *Titanic*, take the sub here and there, be a big shot kind of thing, and stroke his ego. I mean he didn't need the money. It was not a money issue. It was not a money -- the company never made money. He didn't need money. I don't hold it against him. He just didn't need it, you know. And so this was a way for him to use other people's money to have a cool gig and talk about what great thing he had done. And like I said, he was trying to prove the industry didn't know what they were talking about by building a carbon fiber sub. I didn't know all that going in on honestly. It's what I came to believe by the end of my time there.

Q. What were -- what was *Cyclops* mainly used for?
A. It was, you know, while I was there, *Cyclops* was -- it started out at the Everett facility. When we couldn't -- when *Titan* came back and not functional, it was suddenly like, hey, there's this lull, you know, we have to regroup, you know, I had to get rid of all the people, all that stuff, right. So there's a few month lull when I think Stockton went out funded -- got some funding. And then during that time, we dove *Cyclops* a bunch. So it kind of took up the activities of the *Titan* team or whatever.

But anyways, I mean it was like -- I mean we'd go out in the Sound, and they would just go for a dive. Occasionally, they'd bait the water and they'd throw bait down there and, you know, some frozen meat of some sort, and they hoped to see a (indiscernible) or something. You know, Stockton was always trying to sell the sub to research organizations or something to like do, you know, let us do some research. None of that ever paid -- well, I shouldn't say never but, you know, generally speaking, that was few and far between and didn't pay the bills obviously.

So it was like, you know, it was training. It was a training sub. It was there. It didn't go real deep but it was training sub. People loved to dive in it, you know, like the team liked to dive it. There were several people there that were only there to go diving, you know. Like that wasn't their job, but they were there because they wanted to get in the sub. I mean there's not a

place you can do this. So those guys loved diving that sub. It relatively worked, you know. Compared to *Titan*, it was a lot easier to function. It had a hatch. You climbed. You climbed out. You know, all these things. It had a big, huge window so everybody could what was going on. So, you know, we'd go out and just do training dives mostly, you know.

Q. Were there systems on *Cyclops* that were interchangeable with *Titan*?

A. A little bit. So *Cyclops* predated me but *Cyclops* came in as a sub. I don't remember what it was called but it was a real sub that somebody else manufactured, right. It wasn't like a home built thing or something, right. So, I mean it has some paperwork and maybe had a cert, maybe a cert. I'm not sure. I can't remember. But, you know, it had some pedigree or something.

So Stockton wanted to convert into what his vision of OceanGate was, right. And so he got, you know, he -- well, I don't know if he did it but somebody painted it white, you know, and got the happy sperm look and, you know, he started to OceanGate-ize it. So he got a joystick, you know, software system put in and, you know, the computer, the control, everything. It had a diesel electric motor in it. Before I got there, he had taken the diesel electric out and taken -- I want to say it had a conning tower that you could use before I got there, you know, somewhere along the way when he got it. He got rid of all that. Or somebody did. It wasn't while I was there. And so, you know,

it was OceanGate-ized partially.

He had three subs there. Well, he had four. Stockton had a Kittredge 250. You know what that is? Okay. It's a sub that you can buy plans for out of -- I don't know. It's a *Popular Mechanics* sub I would call it, right.

Q. *Antipodes*.

A. Nope. It's -- what do he call it? Not *Antipodes*. I don't remember. It'll come to me at some point, but there was another -- the first sub was a Kittredge 250. It's a kit though. So you take -- you buy the plans. You take a propane tank, you cut the ends off or you put holes in this thing in the appropriate places. You put in these systems which are roughly defined, you know, in this kit and you've got yourself this little sub with some -- you put on some thruster covers (ph.) with some like Minn Kota, you know, fishing, you know, trolling -- not trolling motors but whatever those -- yeah, trolling motors. You put on some of those and you've got this little sub that came make it 250 feet deep. There's lots of them in the world. It looked like a death trap to me. I never got it. I don't know that they ever dove it while I was there, but if they did, it was like one time.

Kenny, who I did respect, is a pilot. He said it wasn't as bad as it looks. I was -- I had no interest in what -- it looked terrible to me. It's like this little thing you crawl in. I'm not claustrophobic. I cave dive or used to but, you know, it's like, it just didn't look good.

Anyways, that was his first sub, Kittredge 250. He has a name for it. I just don't remember. We named all the equipment. I don't remember what it was.

Then he bought *Antipodes*. *Antipodes* is an ABS class sub, you know. It's old. I would say it needed some tender love and care, but outside of that, you know, again Kenny said that was one of his favorite subs to fly. I liked this sub.

And then he had -- and then he bought *Cyclops*. That was where he started OceanGate-izing stuff. That's the star word for it, right. And so he partially OceanGate-ized *Cyclops I*.

Then he bought -- then he wanted to do, you know, deeper, *Titanic*. I don't remember what all the depth ratings of these things were but, you know, it kind of got deeper as you went, 250, I think 100, 1,000 feet maybe.

Q. 1,000 meters, 1500 meters probably.

A. I don't remember. Something like that, you know, for *Cyclops*. I don't remember to be honest with you, but they got deeper, they got deeper. Then he wanted to build, you know, to go to the *Titanic.* So he started *Titan* as a scratch build, right. So it's like he went from, you know, something you build as a kit to -- which never we really didn't dive, but to a ABS class sub, something he partialized, you know, parted up and partly engineered to a full up OceanGate engineered thing. You know, it's kind of a lifecycle.

Q. What was -- Bob Shuman, what was his overall role when you

were there? What did he do kind of day-to-day?
A. Manage Stockton, you know. Okay. Say -- I'll just give you -- where I'm at on this. Like Bob -- Bob and me got along great at the beginning. I really liked him. I liked him a lot more than Stockton. I felt like he could help me with Stockton. He, you know, I felt like me and him were on the same side a lot. When there would be an improper design or something like that choice being made by Stockton or he was forcing something on us, I would go to Bob, and it was -- I felt like Bob helped the situation.

After the vaccine thing, Bob essentially stopped talking to me. Like 100 percent. Like wouldn't talk to me any more. You know, there was a couple conversations here and there, but in general, he stopped coming in when the vaccine thing happened. He stopped coming to the office when COVID happened I should say. Never came back in other than a very rare, you know, solo kind of mission with nobody there. Came in once for my review, and had to sit out at picnic table with all the masks on outside, and he sat at the end of the picnic table, and me and Stockton sat like this. Stockton had my -- did my whole review. Bob sat at the end of the table. One of the comments was, you need to treat -- he's your boss. He needs to be your boss. Stockton told me. I said, from the table, I'm like do you want to be my boss? What are you telling me this for? Tell him that. If you don't want him in the middle, stop talking to me. I don't know. I was frustrated by

then.

This is late on in the thing, you know what I mean. I pretty much had it and I was kind of like, whatever. Tell him to be my boss then. I don't care. And, you know, my take on it was I really liked him in the beginning. At the end, he wouldn't even talk to me. You know, he talked to me once on the *Titanic* trip because he couldn't get any information from anybody else when there was a crisis happening. And, so he reached out to me and he talked to me and thanked me for talking to him. But like literally, he stopped talking to me.

He walked in one day when I had been fired. I don't know. He assumed I wouldn't be around. I was in there just talking to the guys, you know, probably after a day I was not having to come in, but I knew nobody was going to be around. So I went and met with the guys. And he walked in the door at the back of the shop. So we heard the door open. We all look over, you know, and he comes walking through. He looks up. He sees me. He turned around 180 and left. He never said a word. And I said, Bob, I can leave because I wasn't technically supposed to be there I guess. I wasn't, you know, it was within my 30 days but Stockton had said just go home. Okay. Fine. I can leave. He would have driven up from somewhere near Seattle. I was close by. He didn't -- he just left. He didn't say nothing.

So I mean at the end, I found him totally unhelpful for me. I don't think he liked me at all any more because of the vaccine

choice. And he didn't do any managing of me any more. Stockton did all the managing of me.

Q. Was he pretty involved in the day-to-day company operations? Did he know kind of the ins and outs of -- did he know all of the subs, the *Titan*, the *Titan* engineering, the marketing?

A. So at least in the beginning he was in the day-to-day stuff. I mean I would say this. He did get -- he didn't micromanage me which I appreciated because that's the last thing I want. He didn't do that. But he was knowledgeable about what was going on. He really focused on the carbon fiber which I appreciated also because carbon fiber wasn't my expertise and, you know, my expertise was all this other subsea stuff systems and all that stuff. So I spent more time on subsea stuff and all the inner, you know, all the other systems. I did participate in carbon fiber stuff but Bob really focused with the carbon fiber selection, Toray, the Freons (ph.), all those guys. He sat in every HyperSizer meeting unless there was some severity (ph.). So he focused on FEA, HyperSizer, carbon fiber selection resin system. These were all things that we kind of foreign to me, and I had my hands full with, you know, 20 other systems for this sub that needed to be built and those guys, Stockton and him would weigh in on all those to make decisions, but they weren't doing like here's the design, here's the whatever, until the end and then they'd go yes or no.

So he was involved. I mean, you know, he would do other

tasks for Stockton like marketing tasks, sales tasks and, you know, if something went really sideways, he'd get involved at least in the early stages, you know, he would -- he had a contract with Janicki that, you know, they wanted to hit us with a change order. This is normal stuff, right. They wanted to get us with a change. They thought they were -- they wanted more money. We were like, no, that's in the scope. So, you know, like instead of me just going along with Janicki to fight that thing, he came with me, you know, gives him more clout, a bigger title, more clout, another person to push back. Did that stuff, you know.

He tried to help us get a tracking system. He spent a bunch of time trying to find a tracking system. At the end, Stockton got a freebie from Centrodyne (ph.), and we took the first trip, a nice high end unit, the first tip, with the kind of thought that, well, they'll buy the next time around. My understanding is that that didn't happen. They took another rental or whatever and then the third trip I heard they bought something other than a Centrodyne. So, you know, he was involved in a bunch of that.

Q. Okay. Do you the relationship between OceanGate, the company, in Everett, and OceanGate Expeditions or maybe Argus Expeditions that was a base company or a registered there and then the OceanGate Foundation?

A. Okay. I don't know anything -- I never -- I don't think I've ever heard the word Argus.

Q. Okay.

A. So I could be wrong. I could have heard it somewhere, but I don't know what it is. What I do know is we had OceanGate Expeditions and OceanGate, Inc. Inc. is the Everett. Expeditions is the Bahamian. Stockton was very proud of the fact that if anybody ever sued him from a mission specialist's point of view, they would have to -- they would be suing OceanGate Expeditions because that's where they had the contract with, and that they would -- good luck getting through 10 years of -- you know, you'd be 10 years trying to get through the Indian courts. So what am I worried about? And he was pretty vocal about that, and it was we have pride and -- I looked at it, you know, I didn't know anything about that in the beginning but by the end, when I was more cynical, I was like this is a shell company he set up. He's just got this shell company over there.

Occasionally he would he tell us, oh, don't, don't reply from OceanGate, Inc. or something like that or you guys are OceanGate Expeditions all of a sudden, you know. I don't know. I received my OceanGate paycheck from OceanGate, Inc. I'm pretty sure. He had, you know, he's a smart guy from -- he was a litigious guy and had lawyers to help him set up things. This is my assumptions and stuff he kind of told me. And I thought he probably set up things to keep himself secure as possible, you know. To keep himself from getting into any trouble.

Q. What about OceanGate Foundation? And who ran that?

A. So Wendy ran it. Wendy, his wife. I didn't really know what

they did. I know that, you know, occasionally they'd have a -- I don't know what they'd call it, but an educational event or something like that. You know, I don't believe I ever went to one. So Michaela (ph.), I remember her going to one, you know, and she'd teach something or whatever, you know. She'd tell people about subs or something. I don't really know what they did. I know they had some money. I remember Stockton complaining that he was struggling. He couldn't get at that money because his wife wouldn't let him or something because it was OceanGate Foundation money. I remember some conversation like that, but I did not have anything to do with the foundation. I don't really understand it. Don't know much about what it was used for.

Q. And Wendy, what was her role and can you explain what she did kind of day-to-day on the expeditions?

A. Yeah. So I mean day-to-day she wasn't -- as far as I know, she didn't have an official role in the company other than she was Stockton's wife. So you were going to be respectful obviously, right. She would show up on any given day and hang out, not much hanging out, but she would -- any -- almost any time there was a dive, if she didn't have something else going, she would be there. So especially if Stockton was in the sub, she would come in. So that applied mostly in Everett but, you know, for the most part in Everett, but also like an expedition, she went. I think she went on pretty much every expedition. Like I know she was on our *Titanic* expedition. She was on it full time. She'd get sick on

boats. She troopers through. She's there. So, you know, her role. She would usually do the -- as far as the diver operations, she would do the dive tracking and comms. So typically comms. And so she's basically the one talking back and forth to the sub is what it really amounted to, and she'd keep a good log of the conversation. It was one of the things that, you know, if Wendy was there, you knew you were going to get a good log, and she'd give it to you. So, that was kind of what she did.

I mean, you know, was she an employee? No. Did she have pull and swing? Yeah. Most of the time she didn't directly tell me what to do or anything like that. Generally not, but occasionally, you know. One of the things that upset me on the *Titanic* was on the last dive of the 2021 trip, it was kind of a snarly day out, not a storm or anything but just, you know, it wasn't sunny and perfectly calm, you know what I mean. So you, you know, you get up and it's like, people are already on edge about diving, you know what I mean. I mean even me, it's like, oh, great. You how -- I assume you guys understand this, but it's like when you're out there, it's glass calm, like anybody could do anything. You can accomplish tasks when it's glass calm out on the ocean, and it works. It's easy. When it's not calm, it's hard. It's blowing. All this stuff.

So anyways, it was not a bad day, but it wasn't great. And so, you know, we were trying to launch the sub. It's the last dive. We have four people in the sub. We've been up since 5 or

something, getting it ready. Got the people in the sub, and she's changing the metrics for how we account for the points for -- assigned for anomalies and strikes. So just randomly, she's yelling over from the -- she's radioing. We're all in the same room but, you know, we're separated on the bridge basically.

I'm supposed to be in control of the dive as the mission director. And she is basically making the calls on, we're going to, you know, we have "X" amount of strikes and so many anomalies and these things add up, so if you get three strikes, you have to cancel the dive.

It's like, well, are we diving or not? You know, like I get that we have a point system, and I get that if we screwed up enough, we're going to stop. No problem. But are we trying to stop? Because like if you want me to stop, just call it and we'll stop. But like we're all working very hard and we've been up a long time to get these four people to the *Titanic*, and nothing's telling me to stop yet. So let's keep rolling.

But I don't know, I felt like she was trying to stop it. She was changing the rules on me, you know, there was no document. There is a document for how many points get assigned for what kind anomalies somewhere, but I -- you know, it's not like she came in with a new document and says here's our new document. Nothing. She just said, no, we're starting with this many points because of this. I'm like from where? So I kind of got upset at her. We had a couple of words back and forth, you know, nothing horrible.

But I was pretty upset, and then, you know, kind of eventually, we actually got them off the dock or off the deck and they did the best dive we had, like as far as got down to the *Titanic*, didn't have any problems, flew around there for 2 or 3 hours, came back up, like we made it.

So, you know, anyways, it's -- generally she was not doing that, but that day I just had problems with her. But mostly she tried to rein Stockton in some. She would tell him yes and no. Like Kenny had his -- told everybody he was quitting because of the sub. What I was told by Kenny is that he was going to be fired, but Stockton was going to fire him but Wendy told him he couldn't do it. Because Kenny was making the right decision, and Kenny made good decisions in general. And so, you know, these are the kind of things I think she did. I mean her and Stockton would fight. Sometimes we'd all see it. Generally, I would have sided with Wendy, you know. I generally thought she made safer decisions far more.

When they were doing that thing in the sub where Stockton was polling all the passengers and saying, hey, are you going to say here 24 hours? I mean Wendy looked at me and she's like, you need to him to -- you need to tell him that he has to come up. You're the mission director. I'm like, you're his wife. You tell him. Which I, you know, because he doesn't listen to me any more than he'd listen to her. So it was kind of like he's going to do what he wants. Why are you putting this on me? You're just going to

get me in a bunch of trouble. So -- but I did. I said, fine. Give me the mic, you know, whatever, type down. So I type down, you guys need to come up. As mission director, I'm asking you to come up. He made his own decision after that. So, yeah, you know, overall she was okay, but I had my moments.

Q. So the cofounder, Guillermo, did he ever come around or did you hear anything about Guillermo?

A. I heard his name a couple times but I didn't really know anything about him. I mean I do remember Stockton making a story about him. Don't remember what the story was, you know, in Florida, did this, did that. Don't know why he left. I don’t know.

Q. Okay. Was there any talk about specific shareholders? I mean we have a list of shareholders. Did Stockton or anyone else ever talk about shareholders, the market fluency and how that made decisions?

A. Rarely. So the only -- so, you know, off the top of my head, a couple years later, I remember -- I don't remember the name, but the guy that did the winglets maybe was on the board and was a shareholder. I think this is the right guy. Bottom line, he gave us like 12 million bucks and then -- as an investment, and then when COVID hit, and then he backed off and gave us 6 million or something like that. So we never did collect the whole thing. We were kind of -- you know, I looked -- I don't know if this is fair in all cases. So, you know, have to vet this, but I looked at it

as a friends and family connections. You know, Stockton ran in high level circles. These people had money, and they could afford to blow a few million on this thing and not -- look the other way, you know what I mean.

So he told me one time, whoever that guy that gave us 12 million, he told me that he said get the sub done, you know, stop screwing around, stop going on other expeditions. Get the sub done, you know, get *Titan* done. So, you know, you can't keep saying you're going to the *Titanic* and never making it. So you need to hire the right people. He didn't say that. He said you need to get the sub done. That was my election to use that. So that was one.

You know, I think all board members were investors. I think that's how you got on the board. I don't know that for sure. You guys can vet it but that's what I believe was the case. So the, you know, I met some of these guys and knew some of their names and stuff like that, but I didn't get any direction from them and I didn't, you know, like generally I didn't know how much they invested, and you know, you'd hear things here and there, like someone invested a million bucks, 2 million bucks. I didn't really know. I don't know now, you know.

Q. Okay. Let's see. Oh. Were you aware that the outside was Rhino Lined, the outside of the pressure hull?

A. I was aware.

Q. Do you think that -- I mean was that a good decision to Rhino

Line the outside of the --

A. I didn't like it because it hides the hull, and I didn't want the hull hidden because I wanted -- if there was a crack, I wanted to see it, you know what I mean. Now, I don't know if there was a crack, it would be on the outside or the inside, but I didn't want it covered up by Rhino Liner.

Q. Okay.

A. Stockton had Rhino Lined the first sub. So, you know, I didn't right too hard on it but I didn't -- I wouldn't -- I wasn't the choice I wanted to make.

Q. Was there any movements on building a *Cyclops III*, a 6,000 meter sub?

A. The only -- not real movement. The only thing that, you know, I saw going towards that was during the HyperSizer, you know, FEA analysis, like I was telling you before, like Stockton would start having them do, you know, hey, analyze this funky nose cone that looks like this shape. He called it the pill (ph.) shape or the whatever shape, right, and it was like analyze making a carbon fiber nose cone. We already had the titanium ones. We already knew we were putting titanium ones on *Titan*. So it's not for *Titan*. This was for my next sub.

Q. Okay.

A. And, you know, to me that was all a distraction, like we're not nowhere near building a second sub. You haven't even made it to the *Titanic* the first time. I'm like let's focus on the task

at hand.
Q. Were you involved in any of the marketing strategies to try to get investors or mission specialists on board?
A. No.
Q. Did you ever see any marketing material that they used?
A. I mean I saw pamphlets and stuff like that, like they had a pamphlet with the *Titanic* on the front. I liked it. I took one home, you know. You know, it probably basically said (indiscernible) scientists or something like that, you know, I don't remember exactly but, you know, it was definitely a two-page pamphlet, glossy somewhere out there that, you know, I think I got one when I first started at OceanGate and still have somewhere.
Q. Were you ever concerned with, you know, not having a cycle rate on the hull itself? Like that second hull that you helped engineer, were you concerned that it didn't have a cycle rate? Like there was not true -- how many times can it actually dive unlike other -- like the acrylic window had a cycle rate. There's other subs that the Coast Guard certificates that have cycle rates. Were you ever -- was that something you brought up about --
A. Yeah.
Q. -- it being tested to see how many cycles it can actually take?
A. So we were never going to test it to implosion. You know, we were never going to figure, you know, we were too small of a

company. It was never going to happen. We weren't going to take *Titan I -- Titan II* and cycle a hull until we failed it essentially and then start a new hull. It's not going to happen. Like Stockton didn't have the money.

Q. Okay. So that was -- you weren't given -- I just want to make this clear. You were given parameters that you can engineer but here's when it stopped?

A. Yeah.

Q. Right. You can't -- let's say if you said I want to go ahead and I want to do 2 weeks in the test facility, put 100 dives in --

A. It's not going to happen. Three days if I'm lucky. It might have gone two.

Q. Were there things that you can think of right now that safety-wise or engineering-wise may have prevented this casualty from occurring?

A. I mean kind of back to what I said before. I would have stored it indoors. I would have worked on it all winter. I would have --

Q. What about for engineering-wise? Like if you were give, hey, here's $100 million. I want you to build the same exact sub that you have, you can test it.

A. It's not the same equation anymore, right. So now you can build an entire hull. First of all, I would not have picked carbon fiber. That's right off the bat.

Q. Let's say -- so carbon fiber. You have to do carbon fiber

but, you have a budget.
A. Okay.
Q. What would you have done differently for testing to try to make sure that -- to prevent the implosion from occurring if it did implode?
A. At least I would have, I would have started with a -- I would build another hull. We would have cycled it to depth. We could have cycled it multiple ways. You could cycle it to depth enough times to figure out what the cycle rate is like you're talking about. I would have also found out where the crush depth is or where does it truly fail. And then I mean if you've got 100 million bucks, you're going to do that -- you can do that multiple times, you know. You could try different carbon fibers. You can, you know, you can do all kinds of stuff. So I think that the equation is, you know, it's certainly not apples to apples here, but there's more that can be done. There's always more engineering that can be done. So that's kind of a rough ask there, you know, somebody can always second guess a design and say, hey, there's more that can be done. But under the restraints of OceanGate's budget and time, you know, there was -- we did what we could do and I generally thought we did a good job testing *Titan*. I was confident the hull would go -- would not fail without telling us that it was going to fail. I was -- I didn't know how many cycles that would be.
Q. Were you competent putting in paid passengers into that

knowing that it's going to the *Titanic* and would be testing that was complete? You were comfortable with sending people down in that the way it was?

UNIDENTIFIED SPEAKER: The only thing to say about that is (indiscernible) made by [redacted]

BY LCDR [redacted]

Q. The company, knowing that the company is sending people down into the sub. Were you comfortable with the company sending people down --

A. I would have done it differently. Well, one I would have got something classed to cover myself, make sure that we didn't have any mistakes along the way. So that would have been something I would have done different. Another thing is, like we did and somebody brought like how many dives did you do before you took somebody to the *Titanic*? I would have wanted to do more dives by a lot. One of the things that PH Knarley (ph.) told me, he was one of the guys in the sub, right, and he's this industry expert across the globe, that is the last sub he worked on which was, you know, recent, was like the sub that went out to the *Titanic* and did the five deets (ph.) with whatever the -- I can't remember now, but whatever, some celebrity. He required 50 dives. He was like the leader, the engineering leader or team guy or something. He said he required 50 dives before they could do anything with it essentially, right. Fifty dives before he was going to say it was ready. So I mean he's on our boat. He knows -- he had more

insight than anybody else besides the direct team. I mean he had access to everything that he wanted access to. He had tons of access to Stockton. He was on the ship 3 years in a row. And went on -- you can look at the log but, you know, my sense is went on almost every dive. And he was this expert dude, and like him just being there made people feel safe.

And so -- but he said 50 dives, and I'm thinking, well, we're on like dive 3. We're sitting up here on the *Titanic* now, and we know we have drop weight issues, you know, and we know we have a battery issue. The battery issues was not an OceanGate engineered problem. It was a supplier -- you know, they supplied the subsidy battery that was rated for depth. It didn't work at depth at all the time. You know, stuff happens, right.

So -- but, you know, those were two issues that kind of ate our lunch and it's like, if we could do something different, it would be we'd want to test deep before that. And Stockton would want to test deep before that. We did go to the DOTF and we tested the hull but, you know, that's not the whole systems and everything ran and, hey, we know the drop weight work, every system has been checked. This is like the hull. Right. So Stockton would want to do that, but he -- but we didn't have time. So then it was like, you know, you're going straight to the *Titanic* and you're doing it. There was no way to stop the forward motion, you know what I mean. There's no way -- the response you would get to any of those kind of questions is, if we don't go,

we're out of business.
Q. No time -- because of no money.
A. Right. So I think, you know, my sense is and what I hear from the team that was there after I was gone was that that just continued to get worse.
Q. Right. Okay. Thanks. I think that's all I have.
LCDR [redacted] Thank you, sir.
BY LCDR [redacted]
Q. I have a couple of more follow ups, and they're kind of all over the place.
A. Okay.
Q. So, first, I just want to clarify. Did NASA provide the plan for the *Titan* for the lay up and the --
A. Not for *Titan*. I would say, no. They were helping us develop a plan to manufacture the third scale model at least. Whether they actually got a full manufacturing plan (ph.), I kind of want to say yes. That would be a written document that you should be able to find if it exists. I'm not 100 percent sure but I'm like 85 percent sure that that document came out.
Q. For the third scale model.
A. For the third scale model. The full size hull was always in my mind, like I don't know whether they ever came down on a firm decision to say, yes, we will support your guys on a full size hull or if it was always we're talking about in legal. We're not sure yet. You know, my sense was they were probably not going to

come to that conclusion because they weren't, you know, they didn't, they didn't know what was going on or anything or that anything was wrong, but they were worried that their name would be on something that somebody could potentially die in, and then they're in trouble, right. So they were -- my sense is their legal team was hedging against supporting us on that, but I'm not sure it ever came to a head because of the COVID stuff, and we didn't even get the third scale model going. So we were still going to go forward with the third scale model if we resolved this issue with them.

Q. You kind of mentioned about the climate on the *Titan* from like the heat on the surface. I'm guessing the cold at the bottom. Was there a heating element on there for passenger comfort?

A. No. Blankets.

Q. Okay. Was there an emergency scrubber on board?

A. Yes. So, because the Stockton, Home Depot, whatever, scrubber didn't keep up, he would take additional bags of soap and lime to reload that scrubber, that he'd dump, you know, what it was in, into a plastic bag or a garbage bag, and he would pull out more scrubber material and pour it in there. He would put more fans on it. At one point, I believe he was taking two scrubber bins in the sub. I'm not positive on that one, but it was definitely talked about, designing a scrubber to go under the toilet or under the front somewhere, whereas the other scrubber

was in the back. And maybe more specifically to your question, he had -- I forget what they're called, but some kind of blanket. It's a blanket that you can buy that are emergency scrubbers. There's a name for them, but anyway it might be like Kleenex made kind of thing. I don't remember, but there is a name or a jargon for these things, but they're blankets wrapped in cellophane packets, you know, whatever and you tear them open. Once you tear them open, they're not activated, and you can hang these blankets around and those are the emergency backup to the scrubber.

Q. Do you know how long that would be for a person?

A. I don't remember. It's stuff you can figure out from the packaging.

Q. Thank you.

A. Yeah.

Q. When you mentioned Electroimpact paid for the curing, that was just the test model. Is that correct?

A. They paid for -- I'm not sure they ever paid for any curing. They paid for the test model, for the dual layer test piece.

Q. Right.

A. They paid for that lay up and labor and their equipment. They didn't charge us for it so that they could -- because they were convinced that we needed this or we would not produce a good hull. And they, you know, probably for their interest a little bit because now they're in the middle of you didn't make a good hull for us, right. So, you know, they paid for that. They were,

you know, that was a saving grace for me because without that, Stockton wasn't going to so it. With them coming and saying we'll pay for it, we'll do it on our own time, we'll get it done fast, Stockton then said, okay, fine. And then that helped open the door for the multiple cure because I knew more likely we were going to be successful because that didn't get a big wrinkle.

Q. Okay. But Stockton paid for the cure on the full (indiscernible)?

A. Yeah.

Q. During the expedition you were on for the *Titan*, was research conducted during those dives? And I mean like salinity (ph.) measurements.

A. Okay. Stockton made me rent a CTD, conduction -- temperature depth -- what's the C. Conductivity temperature depth meter. You can rent these things from all kinds of subsea houses for oil and gas. They measure CT&E and some of them have more advanced things like dissolved oxygen. We put this thing on the hull, you know, or attached it to the back of the sub on a bracket and it's a turn it on and forget it kind of thing. You turn -- you get it started before you go. It collects the data on board and then you dive and you come back and you download the data. So, yeah, we collected that. There was researchers on board. You know, Stockton would take industry/research type people. Like, and it wasn't always a researched, but it somebody like, you know, a mission -- not a mission specialist. The person I'm thinking of

is Bridget Buxton. She's like a, she's like a, you know, Ph.D. at -- a professor at Rhode Island, University of Rhode Island, right. It would be a mission specialist or an expert I should say, right, and, you know, the perk for her was she might go to the *Titanic* which she did, and they -- and she might get to do some research or something, you know. Maybe she can collect the data from CTD or something and learn something from that or do some research. But, you know, this was not the focus of the trips, right. This was a side show aggravation for me if anything. You know, I had to put this extra piece of equipment on the sub that I was just trying to keep running, and then we're dealing with this extra thing. It wasn't always. Sometimes it was there. Sometimes it wasn't. I don't know if they did it on the years 2 and 3, but that's the extent of the research I could ever thing other than somebody took a video and said, hey, I'm researching. I can get video of your dive maybe.

Q. Okay. Thank you. And then, I'm curious. Did you ever do an exit interview or maybe an email to the company, something?

A. I did not do -- I don't think so. I'm sure they would have asked me to fill out an exit interview form. My guess I didn't do squat. Like, you know, I didn't really want to put stuff in writing. I was going to be upset, you know, and I didn't want to leave a Nick. I found his name somewhere. I don't think you guys were in here, Nick Nelson, for your documents.

Q. Sure.

A. That was his last name. I didn't want to leave a Nick trail, you know, like that. It's not going to do me any good. Stockton was super litigious. Wanted him to know that he was going to sue anybody that crossed him. You know, why do I want to leave this trail of regrets or whatever, all right. So I didn't do that. There was a couple of emails back and forth between me and Amber. Basically, she said, hey, you need to turn in your laptop and your phone. Stockton had already told me that I could keep my phone I think. It's the same phone. All these years, it's the same phone. It's an old phone. You know, it's a couple of years old. It wasn't even paid for I found out. So he transferred it to me, and I got the bill. Oh, it was like a joke on me.

So, anyways, there was an email about return your stuff. I said, no problem. I'll return my stuff. But there was a threat -- oh, there was -- in the email there was a, here, you need to sign this document. And the document, I don't remember exactly but it was like a Stockton get out of free card, you know, that I could never have any recourse. To be honest with you, I was thinking some day the world might come to its senses, and somebody might decide to force people to get vaccinated and firing them for it might not be okay. Don't know. Maybe, maybe not, but I figured I wasn't signing anything. I wasn't signing all my rights away if I had any. I don't know, right. I just wasn't going to sign it. So I sent them back a letter saying, hey, if you want me to sign this and basically sign any liability for you away, you're

going to pay for the next quarter. Yeah, because I'm not a litigious guy. Why am I going to sue Stockton. He'll keep me in court no matter what. Like I'm going to lose. Even if I win, I'm losing, right. I had no interest in that. So -- but I'm like maybe, okay, an extra quarter. I'm out of a job. I don't -- didn't have anything lined up. Had to figure it out. But basically knew that would never fly, but I tried it. And so they came and said, no, we're not doing that. I said, well, I'm not signing anything. I'll return your stuff on whatever day, and I did, and that was the end of that.

Q. Just one last clarification. I'm thinking about the mission you were talking about where it was Kenny's last mission. Did they end up dropping the rack to come up?

A. They eventually dropped it. So what happened was Stockton, and I don’t know if he did this intentionally or what, but it worked out fine. He -- there's a hydraulic pump inside the sub. There's a, you know, a valve that you can turn that says drop the weights -- or sorry, drop the weight carriage or drop the legs. The weight carriage, gets up, you know, the inner pack's all hooked up in the bottom of the sub. It pumps it real slow, and as it pumps, there's cylinders pushing pins that are in the drop weight. Well, one -- you know, you've got two cylinders in parallel, one's always going to beat the other. The pack with the least resistance is going to go first, right. So one led the other by a tiny bit, and the one side dropped. When one side

dropped, a bunch of weights rolled out and it started coming up. So he started coming up and then it was like, hey, you know, he saved it, you know what I mean. Like he saved losing the carriage, and he made it all the way up with the carriage hanging by the other side. you know. When he hit the surface, maybe before, he was telling us, hey, we've got -- the carriage is still hanging. Get somebody up there with a rope so that we can lasso this thing as soon as I get to the surface so we don't lose it once we get to the surface. We did. We got rope, lassoed it, dragged it back. Reattached it, all this stuff, you know.

And, you know, while they were down there, they came up with some ideas about how to like mitigate this problem, right. We're not getting the drop weight motor really to run on this trip, right. We would have been through all kind of gyrations trying to figure out what we could do. It was a DC brush motor. It couldn't go to the depth. It wasn't going to work.

So we, you know, they -- Stockton and Kenny came up with two new methods to make it work. One was called the Kenny warp. You heard about this earlier. Okay. One was called the Kenny wrap and it didn't really solve the problem, but it was a different way of loading the weights. And because you loaded weights differently, one of the problems with the drop weight system was that the weights could jam in the track.

So there's two main problems. One, weights could jam in the track. Two, the motors weren't turning the shafts that singulate

the weights and drop them. That was our problem on that, on that first trip.

So the weight jamming in the track, the Kenny wrap method would fix this problem. Still need the running motor. Didn't really have a running motor, so it didn't really function in the full solution, right. But it would fix the weights jamming in the track. It was basically, you took a string, you hooked it on one of the singulator arms which were below there, and you then turn that singulator on. It wrapped it up like this. That worked fine on deck, and then the idea was when you would -- when you get depth, you'd turn the motor the other way which you could do and then the weight of that thing would be helping to turn the shaft, you know, a little bit and, of course, it would be on that side if the tarp (ph.) and so you'd drop it like this and when, you know, the last tongue got over, the load would push off the tongue and fall. It didn't really work because the motors weren't working at depth. But it would fix the one problem.

So, there was that, and Stockton came -- his idea was called the Stockton roll. This is where he'd put a couple of weights on the side of the sub in like just a spot they could rest, and they were kind of like captured there a little bit, but if you rolled the sub a little, one would fall off. So you would get people down to the bottom, you would get them to not run, because there's no enough room, but like go to this side of the sub, go to that side of the sub, go this side of the sub, and they would rock it

until these weights would roll off which was, you know, obviously really crazy. But -- so that was the two ideas they came up with.

A third hybrid idea that ended up working to keep us going out there was basically those pins, since they dropped at different rates because of the just forces, you know, friction and stuff like that, we could hang weights where those pins were. So there's four spots to hang weights based on the where those pins would normally be pushing and falling out. So we basically moved over to using the hydraulic pump to pump -- gently pump off, you know, a weight or two at a time, and you could have like basically four weights drop that way. You could put as much weight as you wanted in those four spots. You only had like 4 pivots, you know, 4 points of drop versus, you know, 12 different weight, you know, amounts you could drop individually with (indiscernible) working. So that's how we continued to make the trip work.

Q. Thanks. I think that's my last question, except for, is there anything that just that you were thinking about that would be valuable to the Marine Board from a safety perspective, anything we missed?

A. I'm sure there's many stories. I don't remember them right now, but I don't think you missed much.

Q. If something does come to mind later, we would appreciate --

A. Sure.

Q. -- if after thinking about your testimony.

A. Sure.

Q. We thank you. That was a lot of information and great recalls. Thanks.

A. All right. Thank you.

LCDR [redacted] If don't believe if anybody has any further questions, I think at this point this concludes our interview. It is -- oh, yes.

BY LCDR [redacted]

Q. Prior to concluding the interview, to just frame this up real quickly. So this is a purchase order for a carbon -- polycarbonate window for the cost of $365.93. I believe the vendor was Electroimpact. What was this window used for?

A. Can I look at that?

Q. Absolutely.

A. Okay. So this is -- I don't remember the name of the company, but it's not Electroimpact. What this is, is a polycarbonate window. Obviously it's a drawing here that you can look up exactly what this window is but, you know, from this document, I can tell that this window is a window we made for the road show. So it says here, like a code number, road show. That would have been like my financial category to pay for this window in, right. So that would be the budget that this comes out of. So when we got done with the 2021 trip to *Titanic*, instead of bringing the sub directly back to the shop so we could work on it, Stockton wanted me to go on a road show which basically meant go to a bunch of high end country clubs, hobnob with people, show

them the sub, going to the *Titanic*, and try to make sales. I didn't participate in that but I did have to do some engineering stuff to get it -- the sub ready for it. I never saw the sub again. In fact, I never saw the sub again period because I was fired before the sub ever came back from the road show. But the idea was the road show was going to go from like, you know, whenever they got the sub back from *Titanic*, October-ish, and it was never going to come back to Everett and, you know, it was going to go straight to the first event somewhere which was on the East Coast. And then it was going to come back to Everett in like February or March.

So I was really pissed off because I was like, wait a minute. We had these problems. We just struggled through, you know, barely made it through the *Titanic*. We had all these problems. We know what to do to fix them, but like you're not going to bring the sub back for us to fix it, and you're not going to bring it back until May -- or sorry, March, and then we're going to have -- and he wanted to go to *Titanic* early which was also another issue. We were always fighting. He was changing the schedule trying to get, I'm like, dude, we can barely make it as it. Stop the schedule stuff. But anyways, he wanted to go early. So they were going to bring the sub back in March and we're going to have April, maybe March, I don't know, April, May, and we're going to be gone by June. So that gives us 8 weeks to fix the sub instead of the 9 months that we should probably have.

So I was pretty upset up about that, but there was some engineering that had to be done basically. I remember modeling up *Titan* on a semi truck, you know, a container on that semi truck. This was a window that designed to go -- replace *Titan*'s viewport and stick it in there so the viewport was going down the road and having any chance of getting injured. So that's what this was.

Q. So this wouldn't have been used on any dives?

A. No, this is not subsea. It's a slick -- I don't recall exactly, but maybe a half inch thick piece of Plexiglas or, I don't know. It says polycarbonate. A piece of polycarbonate is not going down, it's not going to go down anyway.

Q. All right. I appreciate the information on that. Thank you very much.

UNIDENTIFIED SPEAKER: I have one more. Sorry.

BY UNIDENTIFIED SPEAKER:

Q. Did you work with anybody from -- NOAA employees that would come around the shop?

A. I had a -- we didn't work with any. Like they weren't part of the team. They never did any work. It was a guy who came around the shop. He went on a dive or two. I remember him because he wanted to go diving in, he wanted to go diving in the Great Lakes which excited me because I did all this shipwreck search in the Great Lakes. He wanted me to go to *HMS Ontario* which me and one of other guy in the world know where it is as far as I know. And, I went to lunch with him and Stockton, and

Stockton never even brought up that I had found the *Ontario*. And this guy was just assuming the coordinates would be public and he would get them and Stockton was going right along with it. I'm like, dude, you're paying for these coordinates. I spent my own money and 3 years of my life searching for this shipwreck, you know, brought a boat, you know, I didn't buy the boat just for that but, you know, bought a boat, bought a (indiscernible), built a ROV. I'm not handing OceanGate the coordinates for the *Ontario*. There's going to be a price associated with that. I don't give them to anybody, right. So, you know, they just all assumed that it was going to be good, but it never happened. So it never came to a head.

That guy went to the *Titanic* though. He came out. He thought he was going to get -- Stockton had told him, come out to the *Titanic* with us, be an expert dude, you know. And now Stockton's got to say he's got a NOAA, a NOAA guy on the trip lending some credibility, and this guy was a head guy of some -- I'd recognize his name if you'd say it.

Q. Dana Wilkes.

A. What?

Q. Dana?

A. Yeah. So he was kind of a head guy of stuff, you know, some department. I don't remember what it was, but he was a nice guy, head guy kind of thing. And he was out there on the *Titanic* for at least a week or 2. I don't remember. It might have been 1

mission, 8 days or it might have been 2 or 3. I can't remember. And he was kind of getting upset that Stockton never gave him a chance to get in the sub. And he was like complaining about it to me one day. He's like, I'd really like to get in the sub. It's going to do a lot for my career if I can get in a sub. And I'm thinking, you're complaining to the guy who built the sub who's never been in the sub. I was just thinking like, dude, you're complaining to the wrong guy here. Like I built this thing. I took a huge pay cut to go work for this company and I've turned this company around and I have never been offered a chance to get in this sub, nor go to the *Titanic*. And that was the carrot that was dangled to everybody, not promised but dangled. And so I'm thinking -- I didn't say anything negative, but I was just like, man, you're complaining to the wrong guy. I haven't gotten in the sub either, and I built this thing in part, you know. So that was just kind of funny. So he eventually got off the boat, never got to dive. He had to have -- until Stockton came to me and told me that he had to have a big talk with him because he was upset that he wasn't getting to go and, you know, Stockton had to explain to him that, you're out here to support me, and whatever. You're not going to get to go. So.

Q. Did he ever offer any sort of support from -- any agency support that he could help with, he could help OceanGate that you recall?

A. I don't know. I mean I -- I'm not sure. And so I don't

really know.

Q. Okay. Great. That's it.

LCDR [redacted] We are complete with the interview. It is 17:11, and we're going to stop recording.

(Whereupon, at 5:11 p.m. CST, the interview was concluded.)

CERTIFICATE

This is to certify that the attached proceeding before the

NATIONAL TRANSPORTATION SAFETY BOARD

IN THE MATTER OF:	LOSS OF THE SUBMARINE *TITAN* IN THE NORTH ATLANTIC OCEAN ON JUNE 18, 2023 Interview of Dan Scoville
ACCIDENT NO.:	DCA23FM036
PLACE:	via Microsoft Teams videoconference
DATE:	October 17, 2023

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

NATIONAL TRANSPORTATION SAFETY BOARD
OFFICE OF MARINE SAFETY
WASHINGTON, D.C. 20594

Errata

Interview with Mr. Dan Scoville

Loss of the submersible *Titan*
DCA23FM036

Page/ Line	Original	Correction
9/17	DT	NDT
12/10	returned	retired
21/15	squids	squibs
24/4	guide log	dive log
25/3	Your Honor	You know
38/12	banded	banned
39/19	if Phil got hit by a bus	if Phil dies, got hit by a bus
39/22	the repository	the GIT respository
41/3	engineer.	engineer by contract.
54/17	I can't go on any more.	I can't go on anywhere.
55/6	their technical divers.	they're technical divers.
58/21	was coming up not with a Canadian	was coming up was not a Canadian
64/10	(indiscernible)	it's registering what we call hits
71/16	electrode	Electro Impact
77/18	pre-praying (ph.)	pre-preg
77/18	pre-pray	pre-preg
80/15	Put the valve on	But the bottom line
81/24	de-blast	bead-blast
82/2	We they spot weld	We had them swap out
89/ 9 & 21	PBHO	PVHO
91/22	A. Okay. Yeah. When – were you…	A. Okay. Yeah. Q. When – were you…
101/ 7 & 8	ceiling surface	sealing surface
102/11	(indiscernible)	dives
102/23	periodic	pre-dive
105/3	DC-19	DC-10
108/21	DEC (ph.), a side DEC	deck, a slide deck
109/9	not going	not going
113/19	shear	cure

Page/ Line	Original	Correction
116/12	bit robot	big robot
135/5	gap (ph.)	in oil and gas
143/17	She	Who
146/10	bag	deck
147/21	leave a team	lead a team
157/23	LCDR [redacted]	MR. SCHLOTTERER
158/21	slip	sling
159/20	Fauchon	Fourchon
161/19	weld	welding
162/8	reason	reasons
169/17	PBHO	PVHO
172/12	UNIDENTIFIED SPEAKER	LCDR [redacted]
173/2	mattocks (ph.)	pneumatics
173/12	UNIDENTIFIED SPEAKER	LCDR [redacted]
173/12	UNIDENTIFIED SPEAKER	MR. SCHLOTTERER
183/14	parado	pareto
192/14	(indiscernible)	six gill
194/9	though	built
200/9	Indian	Bahamian
210/25	competent	confident
211/4	UNIDENTIFIED SPEAKER	MR. SCHLOTTERER
211/16	Knarley	Nargeolet
212/11	subsidy	subsea
213/8	LCDR [redacted]	MR. NEUBAUER
215/8	not	now
216/24	researched	researcher
220/18	warp	wrap
225/16	UNIDENTIFIED SPEAKER	LCDR [redacted]