

RECORD OF PROCEEDINGS OF A
COURT OF INQUIRY
CONVENED AT
TRIAL SERVICE OFFICE PACIFIC
BY ORDER OF
COMMANDER IN CHIEF
UNITED STATES PACIFIC FLEET
TO INQUIRE INTO A COLLISION
BETWEEN USS GREENEVILLE (SSN 772) AND
JAPANESE M/V EHIME MARU THAT OCCURRED
OFF THE COAST OF OAHU, HAWAII
ON 9 FEBRUARY 2001
ORDERED ON 17 FEBRUARY 2001
AS AMENDED ON 22 FEBRUARY 2001;
26 FEBRUARY 2001;
1 MARCH 2001; AND
9 MARCH 2001

At Trial Service Office Pacific
Naval Station, Pearl Harbor, Hawaii
Wednesday, 7 March 2001

The court was opened at 0800 hours.

PRES: Counsel for the Court, comments?

CC: Sir, let the record reflect that all members, parties, and counsel are present. Petty Officer Second Class Wright is again present as court reporter in addition to Petty Officer First Class Leather. Petty Officer Second Class Wright has been previously sworn. I'd like to remind everyone that when you speak I'd ask that you talk as slowly as possible and please speak into the microphones to allow the interpreters to provide the best possible simultaneous translation. Mr. President.

PRES: Mr. Gittins, yesterday you raised an objection to the CNN transcription of events in the court. This was done at the remote site. We reviewed that with the Convening Authority. The Convening Authority will allow the notes that they are taking at the remote site because of the access of the press. They have been warned and we have ensured that it will contain the header that it's an unofficial transcript. Okay.

I might say something to the court here. We had some fairly significant events yesterday in terms of our visit. We also heard RADM Griffiths here for several days and today, I'm sure we will give him the opportunities for cross-examination by the Counsels for the Parties. I think it's kind of important for people to understand that we've heard a lot today, and I think all of the members feel that this is by no means our concluding period. I think we heard a lot of things yesterday that give us a strong indication that there are lots of areas that we need to examine. I think some of those areas are going to be examined in the cross-examination and in the redirect. I also think that we are seeing several areas that we need to examine further. I just don't want anyone arriving at the conclusion or in some cases jumping to a conclusion that somehow we've set our course, in any way or the other. I think what we see, more than anything else, is that there are many areas that we have to go and examine. We'll now review procedural matters. Counsel for the Court?

CC: Yes, sir, I have one procedural matter I'd like to have the Court of Inquiry library, which is the reference library that the members have been reviewing both prior to the convening of the court and during the court, marked as the next court exhibit in order. Copies of which--the updated copies will be given to Counsel for the Parties. [LCDR Harrison handed the exhibit to

court reporter and provided copies to Counsels for the Parties.]
Sir, I have no further procedural matters.

PRES: Counsel for the Parties, any procedural matters?

Counsel for CDR Waddle, party (Mr. Gittins): Sir, is that Exhibit J or are we labeling that under the evidentiary exhibits?

CC: We're labeling that under the evidentiary exhibits. That will be the next evidentiary exhibit in order.

Counsel for CDR Waddle, party (Mr. Gittins): Thank you, sir.

CC: Exhibit 18.

Counsel for CDR Waddle, party (Mr. Gittins): In response to your query, sir, we have no procedural matters at this time.

PRES: Counsel for LCDR Pfeifer?

Counsel for LCDR Pfeifer, party (LCDR Stone): No, sir.

PRES: Counsel for Mr. Coen?

Counsel for LTJG Coen, party (LCDR Filbert): No, sir.

PRES: Alright. Counsel of the Court, will you recall RADM Griffiths to the stand, please.

CC: Sir, the court recalls RADM Griffiths. RADM Griffiths, if you would please retake your seat in the witness box.

[The witness resumed seat in witness box.]

And sir, I would remind you that you are still under oath and I'd also ask you, sir, to speak slowly and clearly into the microphone to aid in the simultaneous interpretation. Mr. President.

PRES: RADM Sullivan, do you have any questions?

MBR (RADM SULLIVAN): Yes. Good morning, Admiral.

WIT: Good morning, sir.

EXAMINATION BY THE COURT

Questions by a court member (RADM Sullivan):

Q. I've got two areas I'd like to follow-up on your testimony. One area I want to have a discussion about other contacts--sonar contacts, that were held by the GREENEVILLE, during her periscope depth evolution; and second, go back and talk a little bit more about the operations at periscope depth to get your read as a senior submariner on some of those matters. Turning to the first--Admiral, you testified earlier that GREENEVILLE held approximately two or three contacts during the hour before the collision. In your investigation did you have at any time--or did you have any time--any time to review or reconstruct the tracts of the other contacts held by the GREENEVILLE?

A. No, sir, I did not have the opportunity to do that.

Q. Did you review GREENEVILLE'S Contact Evaluation Plot for the afternoon of 9 February?

A. Yes, I did.

Q. And what can you tell me about that plot and the contacts on that plot?

A. In the hour before the collision there was a paucity of information on the Contact Evaluation Plot and it did not prove to be very helpful in the reconstruction.

Q. Did you review the CEP or the Contact Evaluation Plot--the reconstruction that was done by the staff of Submarine Force Pacific?

A. I am not aware of a reconstruction of the Contact Evaluation Plot by the staff. I did not review that if they did one.

Q. In your opinion, could GREENEVILLE have confused Sierra 13 with one of the other contacts she held?

A. That is possible. However, in order to be confused the logical sequence would be that contacts would be on near coincident bearings. The Sonar Operator and the rest of the crew would have difficulty in differentiating between which of more than one contact in a similar bearing was creating the energy that they were tracking and therefore developing solutions on. In this case, there was enough bearing separation between the other contacts integrating all the other contacts that the interviews regenerated. There was enough bearing separation between the various contacts so that it would be unlikely that the ship would be confusing which was which, on the day in question and the hour before the collision.

Q. If there was confusion, how would you, as a senior submariner, what would you expect to see to resolve the confusion or to resolve the ambiguity, between contacts?

A. I would expect to see significant attention paid by the Officer of the Deck and the senior watchstanders, including the Fire Control Technician, the Sonar Operators, and the Captain to see what the fire control system and the sonar system, and controlled maneuvers of the ship could do to sort out the confusion -- deliberate attempts to take the time to conduct the target motion analysis maneuvers and analysis of the contact data to sort the confusion out.

Q. So in other words, you would have expected even longer TMA legs or additional TMA legs? That would be the expected action to be taken to resolve confusion?

A. We're speaking generically now. That would be what I would expect this ship or any ship to do to resolve confusion, generically, when there were interfering contacts and you were having trouble sorting them out. I'm not sure that was the case on this hour in question however, Admiral, because again I don't think there were enough contacts nor were they coincident enough in bearing to create that kind of confusion.

Q. Okay, thank you. I would like to turn to my second area. Now first, LCDR Harrison, would you put the exhibit up that has the depth profile during the periscope depth observation?

[LCDR Harrison did as directed.]

RADM Griffiths, I'd like to ask some more questions about the performance of GREENEVILLE during the periscope depth evolution. What perplexes me as a submariner is, why no one on the ship, including the individuals who actually used the periscope, did not see the EHIME MARU. And I look at this and say regardless of the accuracy of the periscope after a clear sonar search, that coming to periscope depth and seeing the contact would have prevented this collision. You have testified about the lack of time or the time that was done at a periscope depth of 80 seconds. But when I look at it, the accuracy of a periscope depth search or a search at periscope depth, there are certainly other things that go into the equation. And I'd like just to review those with you. The time we've discussed, again your opinion 80 seconds, to do this is compared to be inadequate is that correct?

A. Yes, sir.

Q. The material condition of the periscope during your investigation. Was there anything found that would cause you to think the periscope was not performing to standards?

A. The short answer is no. I do want to stress there was a materiel issue with the Number 2 periscope. I just don't think it's relevant to that period of time. The material condition problem with the periscope which was recognized by the ship was in the use of a special feature that it has which is called an Auto Stabilization Gyro. What it allows the ship to do is to artificially dampen out wild gyrations of the periscope, which is of course attached to the ship and swing you around in high seas. So in high seas, if its not stable enough to get a good optical view they use this circuit to artificially stabilize the view to the periscope operator even as the ship continues to swing, and that was out of commission. In that it was at least in a reduced status. In that it caused the optics to skew in the wrong direction or take a while to get back to the correct elevation and azimuth. All that said, I don't believe this circuit was used on the day in question because the seas were not such that the ship would feel compelled to use it. I don't believe it was in use. Further testimony could help elaborate on that and I don't think it was germane to this hour before the collision. Otherwise the periscope was in excellent health.

Q. You discussed that the periscope television system PERIVIS, was in operation? Does that have an effect on the ability to observe the contact? Does it cut down on the light that is received through the periscope?

A. It does have a deleterious effect on the amount of light that the periscope operator can use to see objects. There is a trade off, in other words, to use the PERIVIS. The value you gain from it is that other watchstanders can also see what you're seeing. But the price you pay in daylight is that it cuts down, and I believe it's approximately 40 percent, of the light available in the optics to use to see contacts. So there is a trade in its use. However, the net analysis would be in daylight it's better to use it than not because you get so many more eyes on the problem.

Q. But you would expect in this situation that GREENEVILLE would have had PERIVIS energized going to periscope depth in this situation during daytime?

A. Yes, sir. If I were in their shoes I would have used it.

Q. Thank you. I'd like to discuss magnification scope. What effect does magnification have and what are they? Different magnifications that can be used and how would you employ them?

A. There are three basic magnifications on this periscope, kind of a low, medium, and high-power. One times multiple

magnification, six times multiplication, and 12 times multiplication. Additionally, there is a doubler that can be used to double those magnifications when you want to get an extremely fine view of an object. Now there is a price to pay each time you increase the multiplication. You are getting a smaller field of view in the scope. And so you have to take into account that you will see a smaller sector visually, both horizontally and vertically, when you increase the magnification. So that's why these safety sweeps for example, on the periscope, are performed in low-power. Because you're trying get around in about eight seconds and you wouldn't see anything in high-power in that speed because the eye would not be able to adjust quickly enough to see objects in high that quickly. So the higher the magnification the slower you must train the scope in order to see with the same acuity and the smaller your field of vision so the longer it takes to cover a given sector the higher the magnification. And that's basically what I think what you were asking.

Q. Yes. Would you comment on operator skills during the normal course of events? There are large number of people will use periscope for periscope watch. Does that have a large effect on the skills of the operator? On his ability to view contacts?

A. I think it's fair to say that experience and proficiency is a significant factor in how well someone would use a periscope. By the time you're a Commanding Officer you're probably the best periscope operator on the ship because of the years of practice and the experience level that builds on proficiency. A newly qualified individual would probably be on the lower end of proficiency. In general because of the lack of the experience of learning to use the periscope in stressful mission related training and operations.

Q. Would you comment on the time of day or night where you are looking into the sun--those types of effects has on the ability to see through a periscope?

A. You see much more in day than you do at night because the periscope requires light in order to clearly see objects. It's much more difficult to see objects at night. If you have a target that is a darkened ship, on a dark night, that's a very challenging thing to see because of the fact that it's a blacker shade of black against the black backdrop. Now at night in peacetime the international rules for the road require ships to illuminate certain navigation lights and those are fairly distinctly seen because they stand out on the black backdrop. If you have a moon at night you would have more opportunity because of the additional light present to see targets even if they're not lighted or if they are in daylight the range is fairly significant even though it is daytime. An overcast day or a hazy

day significantly reduces your ability to see through the periscope all other things being equal because of the reduced amount of light. If you have a very bright object such as the sun, or even the moon on a bright moon night, and you look directly into that sector it can temporarily blind you. It could actually be harmful to your eye to stare at the sun even very briefly. So we're trained not to train the periscope optically on the sun.

The sun on this day in question was not a major issue because it was overcast. I think that the only other point to make is you have light intensifier modes on the scope where you have a -- in effect a night vision capability to use at night and you have to -- there are certain limitations on how to use that or else you can actually reduce your ability to see. But that's not your main tube the day in question, which was daylight, and you don't use that in daylight.

Q. Okay. Next, sir, I would like to just reiterate--or talk some more about is the sea conditions, both weather and actual wave heights and so forth.

PRES: Admiral, could I do one follow-up on----

WIT: Yes.

Questions by the President:

Q. There never appears to have been, Admiral, and I understand both the Officer of the Deck did a sweep and then the Commanding Officer did a sweep. When he used the PERIVIS, is there a requirement for specific watchstanders to use--to look at the PERIVIS while the Officer of the Deck or the Commanding Officer were using the periscope? Are there duties assigned in that respect?

A. Not formally. However, custom and practice provide emphasis for ship's watchstanders. Particularly those that would routinely be able to over-see that, to assist the Officer of the Deck in looking at PERIVIS. On missions you can have much more strict regimes in that regard. On daily operations it would be--a ship's normal practice to not have a formal assignment of observing that. But in general, backing up watchstanders as a principle would make people like the Fire Control Technician of the Watch, the Quartermaster, other officers, to try to view those screens to back up the OOD. And frankly, I don't know if this ship had a policy, written or otherwise. And that's something perhaps for you to investigate.

Q. Well yesterday when we went into Control on GREENEVILLE there were monitors for PERIVIS on both the starboard and port-sides slightly forward of the conning section--or the--for the stand for the periscope as I recall.

A. I believe that's accurate.

Q. Now, when the Officer of the Deck swept the horizon do you know if the Commanding Officer used--took that opportunity to look at the PERIVIS while the Officer of the Deck was? In terms of his--maybe preparing himself for--for his periscope sweep? I mean, because there's a limited--to me there's a limited opportunity to look outside this submarine. And was the ship taking what you--what I expect every prudent opportunity to use some visual search that it was conducting with the periscope?

A. My assumption is that the Captain certainly looked at the PERIVIS when he wasn't personally on the scope. I can't imagine the Captain being in Control and not observing the PERIVIS when the ship is ascending to periscope depth because that's such a vital source of information as you say. I don't specifically know if CDR Waddle was looking at it, but I am confident that he was.

Q. Okay. Including the--after they arrived at periscope depth. In addition to the transition from depth to periscope depth.

A. That whole period. I'm sure when he was not on the scope, he was looking at PERIVIS because that's what captains do.

PRES: Alright. Thank you.

Questions by a court member (RADM Sullivan):

Q. I'd like to ask about the sea conditions--what effects that has on the ability to see things through the periscope, both weather conditions and sea conditions?

A. Well starting with the seas. Whenever the optics are under physical water you're not seeing anything. And then once the water leaves the optics, away--washing over the scope head for example, you don't instantly regain vision. There is a short period of time, perhaps a second or less, while the water drains off the optics and then you can regain your ability to see. There's treatments we put on that head window optical cover that enhances the ability to drain quickly once you're out of the water and restore that vision. And there's a variable there as that degrades and it takes longer and longer to drain. My guess though is because this was the first day at sea for GREENEVILLE it was draining very quickly. So you quickly recover your ability to see once the wave is gone. In less than a second. So when the water is washing over the head window you would not see

and then once it was clear you would again. That's the first effect to note.

A second effect is a little more subtle. When you have large troughs and you have a wave and then it goes down into the dip of the trough and then up to the next wave and the periscope is situated between the two wave heights in that trough, your distance to the horizon can be theoretically reduced because there's a wave in the way of where you're trying to look. So even though the head window is out of the water there's a wave in the way of the direct line of sight to the horizon. And you have to look up a little bit to see beyond that wave. So you have that proportional reduction in distance to the horizon based on the wave troughs and waves. Now the lower your head window is to being underneath the water the more effect that has. And it's a variable. And over time it becomes less apparent. So in that condition if you were worried about stealth you would have to be--learn to be patient, use more time, keep your head window close to the surface, intermittently have your sight interrupted. But over time integrate to where you can see in a given direction. If you raise your periscope higher for example, when your stealth is not an issue, you greatly reduce that interference and overcome it. You basically stay above the top of the waves all the time. And that would be a prudent thing to do in fairly significant seas such as 6 or 8 foot seas if safety was your only issue and you wanted to see a distance to the horizon.

Now on the issue of weather. It's a significant effect to have a hazy day. And as I've testified before this was a hazy day by all accounts. It was overcast and hazy. And I have several statements that would indicate that. It was particularly difficult to see light colored objects against the sky or horizon on this day because of this haze. And I'm sure that was a factor that precluded the ship from seeing the EHIME MARU, a white painted ship, on that hazy day.

Q. To follow-up on that, was there any indication of what the visibility was once they were on the surface? Were they limited in visibility?

A. Other than a haze affect, which would reduce their overall acuity as you go farther in distance, I believe they had a relatively distant horizon. I don't have good, firm information on the actual visibility as a pilot would report it of "X" miles. I just don't know what their visibility was. But I have a sense it was not unlimited but distant that they could see. But the haze reduced distinguishing objects. So I'm giving you an ambiguous answer because I don't have a good, solid, factual answer.

Q. Well it's something we'll follow-up on. But to me to see if the visibility was at least 3 or 4 miles we should be able to figure that out from some source. The final area dealing with the accuracy of periscope depth observations that I'd like to explore is the height of eye. You have already eluded a number of times to this, but let's take it from this point of view. Theoretically, if we were on a--in a flat sea, calm conditions, and you brought the ship up to broach depth, which I believe for this class ship is 50 feet. Is that correct?

A. To the approach depth?

Q. Broach depth.

A. Oh, broach depth. Yes, sir, 50 feet approximately.

Q. What theoretically is the greatest distance that you could see through the periscope on a clear day, flat sea?

A. The way that I would calculate that would be to use the thumb rule. Whatever the distance above the waterline that the periscope head window is in feet, I would take the square root of that distance and multiply it by 1.14 and that would be the range to the horizon in nautical miles just for that periscope's height alone. And so if I used the 14 feet that this would give me from 50 to 64 and some change in a flat sea it would be approximately 4 1/2 miles.

Q. Okay. What about at 58 feet keel depth?

A. At 58 feet you're now looking at the square root of 6 times 1.14 and so we're talking maybe 3 miles.

Q. 3 miles?

A. Approximately.

Q. Now that's to the--the surface----

A. Actually it would be a little less than 3 miles.

Q. That's to the surface of the ocean, correct?

A. That's to the hori--that's to the curvature of the earth going over the horizon. So that's with no height of eye of the target. If a wood chip was floating on the sea you would see it if it was big enough. With no height you would see it at that distance.

Q. For a ship similar to the EHIME MARU, which is--it's probably as a rule of thumb for submariners probably about 50 feet or so? I don't know exactly what it is. Do you know what it is?

A. I--I remember including that in my matrix as an enclosure and I used several heights because I did not assume that the very top of the mast head was a good target. It was white. It was

against a haze. So I brought it down to where the deck and the bridge and the black band around the smoke stock--stack top were. And my recollection is that we're now down to--well I don't want to hazard a guess. It was the difference between 25 feet and 55 feet or something like that when you eliminate the tiny mast as the real reasonable target for them to see and come down to the bridge area. And my recollection is you're now talking mid-twenties in feet above the keel. But the enclosure should be referred to, to get the facts.

Q. Well, while CAPT MacDonald is looking that up we'll come back to that. Are there any effects for the aspect of the target or the contact that you are viewing? Aspect meaning is it--if it's pointing you directly or is it broad looking at it's side? Does that have an affect?

A. Yes, sir, it does. The longer the length of the target, left to right if you will, in your optics the more likely you'll see it. If it's bow-on and you have just the bow-on silhouette of zero angle on the bow, as we would say, that's a more challenging target. As it starts to pivot left or right to a broadside view you start to see the full length. If you look at the overall tracks of the GREENEVILLE and the EHIME MARU over that hour or so as they ended up approaching to the point of collision, and you integrate the GREENEVILLE's general direction over that time, you would see a fairly constant and fairly narrow angle on the bow view of the EHIME MARU for that whole approach. Generally 30 degrees on her starboard side or less. So starboard 30 or less angle on the bow. And that would tend to show one-half of the length of EHIME MARU to the person observing through the periscope or less. And that would be a factor that would reduce the ship's ability to see it in general.

ASST CC (LCDR HARRISON): Admiral, we have that section of the enclosure that we can show RADM Griffiths [pointing laser at exhibit].

PRES: Okay, will you please bring that to the witness?

ASST CC (LCDR HARRISON): Yes, sir.

PRES: Explain to the--what it is.

ASST CC (LCDR HARRISON): This is part of enclosure (1). It is the UNCLAS binder, which was previously provided to the parties. This is enclosure (24).

WIT: That's 20.2 meters? Is that what I read?

ASST CC (LCDR HARRISON): Yes, sir.

WIT: I am looking at the general arrangement drawing. A side view of EHIME MARU. And it shows that the height, and I don't know if this is from the waterline or the keel, I believe it's from the keel to the top of the mast is 20.2 meters. And it's very small print but that's what I believe I see. And when you have to--that's really longer than the actual because we measure from the waterline and not the keel. So I would expect that's, as I recollect, 55 feet is what we attributed to the waterline to the top of the mast. Now to address the lower height of the bridge----

ASST CC (LCDR HARRISON): Admiral, if it would assist you, we have a blow up of that diagram.

WIT: I would almost need a magnifying glass.

ASST CC (LCDR HARRISON): Would you bring that up to the--to RADM Griffiths, please? Please show counsel.

[The bailiff did as directed.]

WIT: Thank you. Initially I was looking at this measurement to the very top of the main mast, the tallest mast of the EHIME MARU, and that would be down to the keel.

ASST CC (LCDR HARRISON): Let me put it up on the wall, sir.
[LCDR Harrison put exhibit on wall.]

WIT: Okay. Can I just--let me look at the measurement here then. I don't see the numbers I'm looking for. My recollection of the manner in which we created the matrix was we took this and then used a scale factor to get the lower heights. Just as a rule of thumb it looks like the top of the bridge is half again the distance that it would take to get up to the top of the mast. So I'm estimating about 25 to 30 feet is the top of the bridge and the smoke stack from the waterline. So let's say 25 feet is the top of the bridge. That's convenient for arithmetic. That's the square root of 25 is 5. So you would add that contribution to the horizon to the height of the periscope as two separate parts of the equation. And you would end up with about 5 1/2 or 6 miles contributed by the ship and 2 1/2 to 3 miles contributed by the periscope. So a theoretical maximum range, flat, calm, good visibility, for a 5--8 foot keel depth of the submarine of about 8 miles or 16,000 yards.

MBR (RADM SULLIVAN): Okay.

Questions by the President:

Q. Admiral, a follow-up. You mentioned that you eliminated the mast as a consideration because of its configuration. It's small. It doesn't present much of a frontal area or side area. So in a reasonable way you just said, "I'll eliminate that from an opportunity to see it." What I'll use is than the configuration as we saw in the picture of EHIME MARU where you had the outline of the superstructure and particularly the top deck on the bridge with the windows and some of those configuration changes as well as some contrast changes. That's what you used then for the 25 feet?

A. Yes, sir.

Q. Alright.

A. I tried to look at a reasonable target for a trained eye and a periscope to see on this kind of day and backdrop. And I came to that compromised judgement.

Q. Okay. And when you use that compromise height of eye of the EHIME MARU with the height of eye to the periscope that the GREENEVILLE created with its periscope that's when you arrived at 8 miles--around 8 miles?

A. As the maximum theoretical range to see the ship. Yes, sir.

Q. Alright.

A. That's before you start reducing that range for all these factors.

MBR (RADM SULLIVAN): Right.

Questions by a court member (RADM Sullivan):

Q. And that's why I want to ask -- those are perfect visibility conditions without swell?

A. That's correct. Okay.

Q. And what I'd like to take--that a step further--is look at the actual depth profile of GREENEVILLE's excursion at periscope depth. And taking in all of these factors what you surmised was the longest--or the farthest range GREENEVILLE could see a contact of that nature when she first came to periscope depth at 60 feet.

A. I would say at 60 feet and a low-power sweep with all of the challenge that that creates for the observer she may have only seen her if she was within 2,000 to 4,000 yards.

Q. Okay. How about when the ship was ordered to a depth of 58 feet, the higher depth there? What--how would that influence the range?

A. That would have a relatively small increase in the maximum range you would expect them to see in a short period because it's only a 2 foot change. And the contribution theoretically that that would add would be somewhere around an additional nautical mile.

Q. So for a total of approximately, at the most, maybe 4,000 to 6,000 yards? 2 to 3 miles?

A. Yes, sir. And these are fairly subjective judgements but they----

Q. I understand.

A. We were trying to compromise here.

Q. From the reconstruction that was conducted how far away was Sierra 13 from the GREENEVILLE at periscope depth? The--the contact how far away was it?

A. I believe it was between 2,600 and 2,200 yards. When I signed my report 2,600 was my aggregate distance. The subsequent refined brought it in to approximately 2,200 yards at that time.

Q. Well, that's well inside what you thought that the reasonable--with the conditions that existed on that day at that time--should have seen the contact is that correct?

A. Theoretically yes. But again it's also a function of time in the direction you're looking. So the actual time the operator was looking at the right bearing to see EHIME MARU may have been the wrong time in the trough and so forth and so on. But yes, theoretically they should have at 58 feet seen EHIME MARU looking in the right direction for long enough.

Questions by the President:

Q. RADM Griffiths, a follow-up there. In the -- in looking at the total time given you have established two ranges for us I believe. 2,000 to 4,000 yards at 60 feet--yards to the 4,000 yards or 1 to 2 miles. And then at the height of 58 feet, 2 to 3 miles. Now there's some contribution--there's gonna be a range change here between EHIME MARU and the GREENEVILLE based on a closing of--at that time approximately 11 knots I assume. Now was there any closure? Was there any change in that range that would bring--is that why we have a value or a band of ranges in your calculation?

A. My closure that shows a matrix of the ranges that the ship could've seen under those conditions did not account for range closure from the movement of the two ships relevant to each other

during the 80 seconds. To add that into the equation would be a fairly minor addition. Because the actual course of GREENEVILLE was an attempt to open that bearing by the law of just course and speed and distance. That's a subtractive component from the 11 knots that EHIME MARU was adding in closure. So roughly 7 knots of closure were occurring. And in the course of 80 seconds 7 knots of closure would attribute 200 yards, maybe 200 yards. So one of the reasons I said 2,600, that was a nominal time because that's a snapshot in time. There would be 200 yards variation just because of EHIME MARU's speed.

Q. I just thought it would be important to make sure that I understood that you had her at a certain range and there would be some closing of that range, but a very small amount based on the time that GREENEVILLE was at periscope depth. And the difference is in the speeds because GREENEVILLE was in fact--the vector of GREENEVILLE was basically going away from EHIME MARU.

A. Yes, sir.

Q. So, it would be a small amount--a smaller mark but probably under 200 yards.

A. Yes, sir.

Questions by a court member (RADM Sullivan):

Q. Just a couple additional items to talk about. Was there any other obstruction from any other mast that was raised at the same to obscure sectors--visual sectors during the periscope depth operation?

A. If there had been other masts or antennas raised they, particularly if they were the communications antennas, they tend to block about 15 or 20 degrees of visual sector. And they would have done so had they been raised. But by everything that I've been able to learn no other masts or antennas were raised during this 80 second periscope depth period. And therefore there was no other visual obscuring of the periscopes ability to see from antennas.

Q. It's still perplexing to me that they didn't see this contact. And since, in my understanding of a lot of submarine collision at periscope depth, often the contact is seen but is in the wrong magnification power, wrong estimates of range, that sort of thing, but not the fact that it wasn't seen. As a follow-up does the GREENEVILLE have the capability to monitor marine band radio from periscope depth off the Type 18 periscope?

A. Inherently, yes. I don't know if their equipment was aligned to do that on this moment on the eighty-second period of periscope depth. Now you would normally routinely monitor

communications once you are surfaced or are operating for a prolonged period at periscope depth. I'm not sure whether or not the GREENEVILLE had her monitoring patch to the scope for VHF radio at that time or not. However, I don't think the EHIME MARU was using her marine radio either. So even if they had been patched to listen I'm not sure it would have affected this collision.

Q. You talked earlier about the fact that her navigational radar was operating, the contacts?

A. Yes, sir.

Q. Could they have detected that and used that as a potential clue that the contact was near?

A. Absolutely. And probably they did detect it. Let me explain. When you're operating near land you're going to be, I don't want to say inundated with signals, but you will have a plethora of signals to sort out because of land-based missions, airbase, you're near the airport there, all the ships in the area, and EHIME MARU. So the real way to use ESM in ships protection, in this case, would be to try to differentiate if one of those signals was; (a) a shipboard radar, and if so, (b) was high signal strength to the point of apparently giving enough side lobes from being close that it could be a collision threat. And of course there is a way to orally get a sense that it is saturating and a collision threat but that's not nearly as definitive as an analytical method of using your instruments in the ESM space. And that takes time. It takes more time, I think, than the 80 seconds they had.

Q. Okay. One more question----

A. So she probably did detect the EHIME MARU's radar along with many others, but it was sorting out and recognizing it, that was the issue.

PRES: May--may--I want to make sure we're clear on that, Admiral.

Questions by the President:

Q. I know what you're suggesting here is that there's lots of commercial radars out there. If you put up an ESM antenna that's in those bands you're going to detect a lot of commercial signals.

A. That's correct.

Q. Now so--because you're particularly to the north and probably out to the east, based on where she was in her operating area, because you've got a lot of traffic out there that we don't know what that traffic density was but we all assumed that there is some traffic density to the north and there's commercial radars that exist on the Oahu and the Islands of Hawaii. But if that--with her closeness, what you're really suggesting here I think in your testimony is that you've got a fairly broad power source. Broad in the sense that when you're close that you have side lobes that tend to saturate the antenna. And so it would tend to look like she had multiple bands or bearings or ESM contacts. Is that accurate.

A. Admiral, that's close. I should--I should emphasize the system in the configuration they were using it is an OMNI non-direction finding mode. So it was looking at all directions. So the issue on the side lobes for a close contact is it's overdriving the circuits because of sheer amount of energy due to close range. And that's a key tip off that we now have somebody close enough who could be a collision threat.

Q. Okay. But in your comment about overdriving and time, I think that's the variance I want to understand. It takes a certain amount of time for the operator and or the equipment to detect that you're in this mode--that you're at a point of some sort of saturation or inundation to detect that--to be a clue that obviously something is fairly close. Do you want to describe it for us?

A. The oral indications coming over the OMNI directional and wideband, because you're selecting all on the frequency bands when you first come up to periscope depth, you have a speaker in Control right above the--right between and above the periscopes. And it starts putting out a lot of noise. And experience can train the operators. Particularly the Officer of the Deck and the CO pay attention to this in their careers and learn what saturated surface search type radars can sound like. Now it's a fairly--it's an art as well as a science to understand what that aural indication means. The ESM operator is the most trained to understand that. And they're generally pretty good at telling when they have a saturation due to a close signal. While they're not able to do that as well as having the more analytical display tools and adjustments that they can make on their screens. So it's a course indication as opposed to a fine indication to have aural tip-offs. And then the analysis that the operator conducts lets him refine his judgement on whether it's a close threat and of the type that would be a collision problem.

Q. Well then it goes to my question about time. Was there enough time to the--for the ESM operator and/or the Officer of the Deck and/or the Captain who have experience in these matters and are trained in these matters to understand that they could have been in this situation.

A. I know they were listening. I know they used the aural indication. I know this was a tripwire they had established and did not feel they had crossed. So it may be EHIME MARU's radar was perhaps in that threshold of where it might have been considered by a routine ship in using routine diligence to determine it was a collision threat or not. It may have been just outside the range where its radar would have provided that indication. I know the ship was trying to make that determination and determine that it was not a collision threat. The ESM operator made a report that we had no initial oral indications that they had a collision threat. So I can't reconstruct that they should have or they shouldn't have. Only theoretically it could have provided enough energy for a reasonable ship and GREENEVILLE to have determined that. But that's hindsight and I can't definitively say one way or the other.

Q. Okay----

A. I can say that more time would have been more help.

PRES: Thank you.

Questions by a court member (RADM Sullivan):

Q. I've walked you through all the different factors I can think of that would affect the adequacy of the periscope search. In this particular case why do you think--what is your opinion? What--why wasn't this contact seen by the GREENEVILLE considering the range that was reconstructed?

A. Well I've thought about this a lot and I'm sure I've thought about it much less than the Captain has thought about this because clearly this is an essential part of this story. I think the depth of the ship and the amount of time that was devoted to the evolution were obstacles to seeing EHIME MARU.

I think there may have been some--how much time that particular bearing was observed as opposed to all the other bearings they were looking at. And exactly how fast the scope was going around, and--so the ability of a human eye to pick that object up as you're moving fast through a bearing. Clearly I think that the failure to very, very deliberately correlate the exact sonar bearing at that time to a high-power look using verbal coaching to get exactly on the right bearing and then deliberately look there. That was done in a more dynamic way without the

verbalization and the teamwork of verbal coaching to the exact right bearing. So there was a little less deliberateness to optimizing your chances given that keel depth and the high-powered scope to see it. That was more informally accomplished. All of those things are factors. And I just cannot otherwise comment on why EHIME MARU was not seen clearly--was not seen--the Skipper would not have gone down and done that emergency blow if he had seen the EHIME MARU. And I guess that pretty much sums up what I know.

MBR (RADM SULLIVAN): LCDR Harrison, do you have the Commanding Officer's Standing Order for periscope depth observations?

ASST CC: Yes, sir, I do.

MBR (RADM SULLIVAN): Could you bring that over to the Admiral?

[LCDR Harrison did as directed.]

WIT: Mr. President, I might add to follow-on to that question. I wanted to have the eyesight of the Commanding Officer evaluated with the vision correction that he may have been wearing; that he should have been wearing; or was wearing. Actually, whatever vision correction he was wearing, if any, at the time he looked through the scope. Because he may have eyesight problems and not realize it that would have impeded his ability as a very experienced operator to see EHIME MARU. And I just throw out that that's one issue I was not able to resolve in my investigation. Because this is such an important question.

Questions by a court member (RADM SULLIVAN):

Q. Admiral, what I handed you is the Commanding Officer's Standing Order, Number 6, dealing with periscope depth observations. In paragraph 0620 entitled "Masts and Periscope Observation"--or "Operations at Periscope Depth." Will you please just read for me, which I think is the bottom line potentially here, their caution on the bottom of page 7, starting with "Be constantly aware".

A. Caution: Be constantly aware that the safety of every man onboard depends on a diligent periscope watch.

Q. So in your estimation was the periscope watch conducted on the 9th of February a diligent watch?

A. Admiral, I think you're asking me to place this caution in the context of how they searched for that 80 seconds. And I think there's a little bit of an apple and an orange to be honest. I think that this caution is talking about never letting your guard down. Hour after hour you're looking out that scope.

You may be becoming fatigued. Get your watch reliefs in there. Don't ever stop being vigilant. Even after tedium and fatigue start setting in. I think that's the general intent of this caution. Clearly whenever you use this scope, even for a nano-second, you want it to be done well.

I'm in a position where I enjoy a lot of hindsight. I'm looking at why this collision happened. The periscope depth period is central to the collision because it was something that would have prevented it had they seen the ship. And therefore I can only conclude because the range was close that the way the periscope was operated was not to the standards we would like.

MBR (RADM SULLIVAN): Okay. Thank you. Mr. President, I am completed.

Questions by the President:

Q. Admiral, I've got--we're kind of getting to our conclusion phase from the members on the particular issues of the collision. I have two final questions and you can answer them in any manner you see fit. And by the way, I'm very impressed with how you've been able to provide this initial look on what you thought and know about the operations of the GREENEVILLE on the 9th of February. Well, one of the things that you have--so for the counsel, what we're gonna do is we're gonna have two questions, I'll let RADM Griffiths finish that and then we'll go into cross-examination on the issues of the collision.

So, one of the things that you commented on over the last several days was, I think you used words like "short". You've used words like "you didn't have the opportunity". You were compressed. To indicate the time that you had to complete your preliminary investigation. And you've suggested a couple of times that there were some areas that the court ought to consider. So I'm--I would like you to, if you could, to provide to the court any recommendations about additional evidence that you think we should more fully examine to make sure that we understand the events that occurred on the 9th of February on USS GREENEVILLE.

A. Admiral, I have anticipated this question while I was waiting to testify a few days ago. I wrote down a few notes on a 3 X 5 card and I would like to refer to that now in order to make sure I don't leave out.

PRES: I'll ask the Counsel for the Court does this need to become evidence after he testifies or----

ASST CC (LCDR HARRISON): Sir, we can mark it and have it introduced as a court exhibit.

PRES: Do you want to do that now or after I use it?

ASST CC (LCDR HARRISON): Why don't we do that now.

PRES: Counsel of the Court knows what he's doing.

ASST CC (LCDR HARRISON): Petty Officer Leather, would you mark this 3 X 5 card as the next court exhibit--evidentiary exhibit?

CR: Yes, sir. [The court reporter did as directed.] This will be marked as Exhibit 19.

WIT: And Admiral, I would also like to qualify that some of the items on this 3 X 5 card are addressing aspects other than the collision associated with my investigation. So they go to broader issues.

The first issue I think I would recommend on your examination of is fully understanding the extent of damage to USS GREENEVILLE. At 3 1/2 days into my investigation I was not able to get very far beyond a preliminary video of the external amount of the ship in that regard. And I think much more is now understood about the GREENEVILLE's damage.

Secondly, I would suggest obtaining court testimony from the officers and crew of the GREENEVILLE and CAPT Fred Byus, Commander, Submarine Squadron SEVEN, who assisted me in the investigation, and who personally conducted the lion-share of the interviews I based my judgements on. And also CAPT Tom Kyle who interfaced with the National Transportation Safety Board and provided me direct assistance with his subordinates in the reconstruction of the geographic track and the sonar data. And others.

Sir, I would suggest you obtain testimony from the Chief of Staff, CAPT Brandhuber and if considered necessary, the civilians who were embarked on the GREENEVILLE.

Fourth, I think it very important that you hear Navy leadership's views on the value of these and similar civilian embarks on our warships and our aircraft because I believe that's very important for the Navy that that be brought out in this story. The validity of the mission that the GREENEVILLE was conducting.

Five, I think that the other contacts besides Sierra 13 who I believe is the EHIME MARU. The other contacts of that hour leading up to the collision should be evaluated in a geographic sense in relationship to these two tracks to the GREENEVILLE and

EHIME MARU's track to further understand and ensure interfering contacts were not one of the causes of this collision. I think the A-RCI data log or system would be able to allow that reconstruction.

Six, I feel that although we haven't talked about the search and rescue evolution yet, the inherent capabilities of any US attack submarine to perform search and rescue are very limited by equipment and procedures. And I believe the submarine force and the Navy need to work in this area to better equip our attack submarines to be able to safely conduct SAR, because, in this instance, being close to Oahu and with Coast Guard help immediately at hand, the ship was not forced to open hatches and try to bring these rafts along side with the risk that would entail to the rafts, try to send swimmers into the water from the top of the sail and so forth. If she were nine hundred miles from land when this happened and not other immediate help was present, then the GREENEVILLE would have had to rely on indigenous means to rescue all those people. We are not well equipped to do that yet and that is an area to look at.

Seventh, I believe that the issue of active sonar needs to be fully demonstrated to you on a submarine underway of a like class to the GREENEVILLE with the cooperative surface target equivalent in target scope and size to the EHIME MARU in a way to underscore the limitations as well as the advantages of active sonar.

Eighth, I think that the Coast Guard's views on the search and rescue evolution should be examined on testimony to compare to the views that I had hoped to be able to provide you in subsequent testimony. I think that the GREENEVILLE did a very incredible and professional job of her role in search and rescue. I intend to testify to that extent, but we should get a second opinion from the experts in this area and that is the Coast Guard; and

Ninth, I reiterate that I believe that the vision of the Officer of the Deck and the Commanding Officer should be examined, should they agree, with whatever corrective lens they may have used on that occasion to determine if that is inadvertently a cause or contributor to the failure to see the EHIME MARU. Particularly the CO of those two since he was the one who had more time and a higher look on the periscope.

PRES: Admiral, I'm struck by the thoughtfulness of your answer. I think you will see in the--if you have the opportunity to watch what the court will do, and I include the whole court in this--I think you will see us go into all those matters in some significance. We will look very strongly at your recommendations

to make sure that we can be as thorough as we can in carrying most of those out. I think one of the intents--I will comment--one of the intents yesterday of the ride, and then to the submarine simulators, was to get a sense of what the conditions were like in the Control Room. What the displays--with your help--what displays and with the help of the crew of the GREENEVILLE, what displays were available and then a sense of what is an appropriate, if that is the right word to use, but an certain appropriate amount and the capability that submarines would typically display in terms of their sonar capability to develop underwater of course, an accurate or prediction about what type of contact scenes or situational awareness they've had before they went to periscope depth. I think we achieved some of that yesterday and that goes to your comment about the ride that you recommended for us to make to get a better situational awareness. I think we achieved a lot of that yesterday, but your other recommendations are very well thought out and I appreciate it.

The last question for you is--I think all the members, strictly the members I won't speak for the Counsel for the Parties, but I think all the members have been very impressed with some facts that you have brought together for the court, particularly in regards to the GREENEVILLE. That a certain assuredness that this was a professional and competent crew. They demonstrated it even on that ride in some areas that maybe were unexpected, particularly with the ability to conduct high-speed turns and maneuvers. It's obvious we have an engaged and aggressive and knowledgeable Captain of that ship that the crew stands behind, in the initial testimony, seems to stand behind in the terms of the way he did his business. So it creates a certain amount of conflict for us that we're sitting here today looking at the conditions that caused this particular collision.

Q. In your view, in your opinion, what went wrong? How would you summarize what you felt went wrong on the 9th of February, for the court, that caused this collision?

A. Admiral, this is the other question that I anticipated. I similarly used a three 3 X 5 card 2 days ago to write down my thoughts on this and would like to use this to make sure that I am complete in my answer and suggest that this be entered into evidence.

[LCDR Harrison retrieved exhibit from witness and handed to court reporter].

PRES: Court reporter, would you please mark that as the next evidentiary exhibit in order?

CR: This will be Exhibit 20, sir.

[LCDR Harrison returned exhibit to witness.]

WIT: This focuses on the actual collision and not the broader issues of SAR and so forth. The first thing that I think contributed is that lack of full manning on the ship, particularly as it applies to sonar. I think that the ship handicapped themselves in having less than a fully qualified watch consistently at the panels in sonar. That would have been helpful to them. I am talking about one watch in particular.

Additionally, thinking about this further, there may have been periods when an additional watchstander in Control to assist the Fire Control Technician of the Watch who was operating four panels and keeping the CEP watch--or CEP plot up could have been augmented. And I don't know if they had the manpower to do that or not but that would have been helpful. I know they had at least one other qualified FT of the Watch onboard and of course the Officer of the Deck can augment watches when he feels the pace is needed--the pace dictates.

Secondly, the fact that the--the important piece of equipment, the AVSDU, was out of commission on the Conn, handicapped the Officer of the Deck and handicapped the CO in their ability to help Sonar determine the contact picture for operations when shallow and going to periscope depth. Again, using hindsight, the loss of this piece of equipment would have required--would have indicated taking more deliberateness and more time to do evolutions such as target motion analysis to go to periscope depth than you would normally take. I note the ship did some compensating measure that included the CO and the XO's presence in Sonar to offset the loss of this piece of equipment. Again, with the value of hindsight, perhaps there should have been a more general change and being more deliberate across the board in the Control Room and Sonar watchstanders to compensate for the lack of that piece of gear. You can certainly operate safely without it, but you may need to be a little more investing in using the fire control and sonar systems when it is not there.

Third, I think that the issue of the numbers and the location of the distinguished visitors in Control because of the passive interference that they created between certain sight lines and watchstanders and observing equipment and so forth is an issue to be evaluated further. I think on this occasion it, in some small way, created barriers to backing watchstanders up with each other in using displays.

Fourth, I think there was a misordering of priorities and an artificial urgency to get on to the surface towards the end of the day. That led to a hurried transition through the key events of target motion analysis in periscope depth observation, specifically in the target motion analysis arena they really only had one quote "good leg" unquote, of target motion analysis and that was on the one two zero course. The preceding time did not appear to lend to a good understanding of the contact picture, then they went to periscope depth -- and then they went to periscope depth when that one good leg was over. Subsequent time at periscope was too brief and too shallow and not rigorously correlated to sonar bearings to be as effective as it could have and should have been.

And then finally the issue of the command environment which is an issue I'm careful to elaborate is subtle, is not clearly understood by me, and is an indirect factor, but I think that you need to look at that further with testimony from the officers and crew. Was the ship inadvertently not backing the CO up as much as it should have because they had grown accustomed to a style of execution of command where the CO was very much in charge and gave a lot of orders? Those orders proved over the long haul for the ship to be successful orders. He was clearly competent and respected and it may have subtly broken down the inclination of the crew as a whole to give him timely and forceful backup because none of us are perfect. I think that is an area that needs to be examined. Sir, I think that those are the factors that contributed to this collision.

PRES: Thank you, Admiral. This court is now in recess.

The court recessed at 0916 hours, 7 March 2001.

The court was called to order at 0934 hours, 7 March 2001.

PRES: The court is now the session. Counsel for the Court?

CC: Let the record reflect that all members, parties and counsel are present. RADM Griffiths, I remind you that you are still under oath, sir.

PRES: I take it we are ready for cross-examination.

CC: Yes, sir.

PRES: Counsel for CDR Waddle?

Counsel for CDR Waddle, party (Mr. Gittins): Thank you sir. Good morning, sir.

WIT: Good morning.

CROSS-EXAMINATION

Questions by counsel for CDR Waddle, party (Mr. Gittins):

Q. Sir, how many people did you actually personally interview for the Preliminary Inquiry?

A. Approximately six.

Q. Would those--those people have been the Fire Control Technician of the Watch, sir, including the Fire Control Technician of the Watch?

A. It did.

Q. And also the Sonar Technician under instruction who was not qualified?

A. It did.

Q. And LCDR Meador?

A. Yes.

Q. And LT Pritchett?

A. Yes.

Q. YN2 Quinn?

A. Yes.

Q. FT3 Brown?

A. Yes

Q. LT Sloan.

A. Yes.

Q. And the Chief of Staff, correct, sir?

A. Yes, and that's -- I count eight now, sir.

Q. You did not personally interview the Commanding Officer of USS GREENEVILLE, correct, sir?

A. That's correct.

Q. And you did not personally interview the Executive Officer of the USS GREENEVILLE, correct?

A. Also correct.

Q. And you also did not interview the Officer of the Deck of the USS GREENEVILLE at the time of the accident, correct, sir?

A. That is correct.

Q. What you reviewed from the CO, the XO and the Officer of the Deck were results of interviews conducted by other persons that had been reduced to writing and had been, then again, edited and typed, correct?

A. Correct.

Q. So there was at least two people between you in the actual interviews with those witnesses, correct?

A. At least one. I don't know if at what point Commodore Byus gave up trying to personally type the interview notes and delegated back to his administrative staff. And whether or not that occurred with CDR Waddle's testimony, or occurred with either of the other two parties or occurred later with the others, either subsequent those -- because I know it focused on those three -- I don't know. But at least one and possibly two intervening people.

Q. Yes, sir. Of the people you personally interviewed, sir, FT3 Brown was not on watch at the time the accident, correct sir?

A. Correct

Q. LT Pritchett was not on watch at the time the accident, correct, sir?

A. Correct.

Q. LCDR Meador was not on watch at the time the accident, correct, sir?

A. Correct.

Q. Chief of Staff was not on watch, but he was in the Control Room, correct, sir?

A. Correct.

Q. YN2 Quinn, sir, was he on watch at the time of the accident?

A. He was not watch per se, he was assigned to help with the tour.

Q. And the Sonarman under instruction was on watch at the time the accident, correct?

A. Yes, that's fair to say he was on the under instruction watch

Q. Under instruction watch and he was performing the role of the workload share--he had the workload share duty, correct, sir?

A. That's correct.

Q. He was not the primary Sonar Operator at the time, correct, sir?

A. The other console had the primary, Passive Broadband Operator and he was probably a qualified watchstander, a Third Class Sonarman.

Q. The passive broadband sonar, sir, that is the sonar that is primarily responsible for safety of the vessel, correct?

A. That's the most reliable sensor the ship would routinely use to determine the contact situation.

Q. So the individual who was operating and evaluating the information coming from the passive broadband sonar was a fully qualified Sonar Technician, correct, sir?

A. That is correct.

Q. He -- he was supervised by a fully qualified Sonar Supervisor, correct, sir?

A. That is correct.

Q. You indicated earlier, sir that the GREENEVILLE, I'm trying to get your words, sir, I'm looking. Was manned by a professional and competent crew. Is that accurate?

A. Yes.

Q. And that the Commanding Officer, CDR Waddle, was an aggressive, engaged and knowledgeable CO, right?

A. Yes.

Q. The selection process for Commanding Officer of a nuclear submarine is rather extensive, isn't that right?

A. Very extensive.

Q. Would you please describe for the members the process by which a Commanding Officer is selected for duty onboard a nuclear submarine.

A. Let me just start by saying that by the time I got a Commanding Officer assigned to a nuclear submarine in our Navy, your talking about a very competent, tested, and proven individual, if you will. An elite member our force. I can say that universally, particularly in this day and age when we've suffered along with and next to the Navy and the forces in this country, significant downsizing of about, in our case, 40 percent of our force structure -- submarine force -- over the last decade. That has further put pressure on the selection process to pick only the very best. So CDR Waddle would be among that number who would be considered very elite.

Q. Of the persons in the Navy who are command eligible and who are qualified for duty in submarines, what is a selection rate for Commanding Officer, mainly for your nuclear submarine, sir.

A. For those who are command eligible, it would depend on the year group. For CDR Waddle's year group, my estimate is approximately 60 percent and that's from memory, but now I'm talking about 60 percent of the command eligible. A much lesser percentage of--if you start with Ensigns and work their way up and if you look at those that served as XO and so forth, but for those that actually could go to command about 60 percent is my estimate. Although I haven't prepared for that--an answer, I mean, that's--it may be off.

Q. Would you agree, sir, that it is a highly competitive selection process?

A. Absolutely, because not only is just 60 percent of those eligible, but, you also have to look at only a fraction those eligible to go to XO, which is a prerequisite job. So when you stack all those windowing processes up, you are really talking about a pretty small fraction, who ever really go to command.

Q. During the course----

A. It's a very aggressive windowing process. You're talking about a very elite cut of officers when they go to command.

Q. During the course of your investigation, did you inform yourself as to CDR Waddle's reputation among Commander, Submarine Pacific staff?

A. I did not have an opportunity to rigorously address that. But in informal discussions with RADM Konetzni, as he was providing me my charter, and certainly in the interview with CAPT Brandhuber, it was clear that CDR Waddle had an excellent reputation and was considered one of the strongest COs in the Force.

Q. Did you uncover any information that CDR Waddle was the type of Commander who cut corners when for safety was involved?

A. Prior to this investigation?

Q. Yes, sir.

A. Absolutely not.

Q. Sir, would you agree that it would have assisted your investigation materially to have that the opportunity to examine CDR Waddle in-depth about what he did and why he did it during the course of the day of 9 February 2001.

A. I think that's very important to do and still should be done if impossible.

Q. Would you agree that would be beneficial to these members of this Court of Inquiry to have the benefit of CDR Waddle's testimony regarding what he did, and why he did it, on 9 February 2001.

A. I would certainly agree with that.

Q. Sir, you talked a little bit out the command climate onboard the GREENEVILLE. Would you agree that one person who probably would have the pulse on the command climate onboard a nuclear submarine would be the Chief of the Boat?

A. Yes.

Q. To your knowledge was the Chief of the Boat ever questioned about command climate onboard the USS GREENEVILLE?

A. I don't know the answer--I--not to my knowledge.

Q. Yes, sir. It would be fair to say you did not interview him, correct, sir?

A. I did not.

Q. Any opinion about command climate onboard USS GREENEVILLE without seeking input from the Chief of the Boat would be somewhat deficient, would it not, sir? Would you agree that?

A. I would agree with that.

Q. At one point during your testimony, sir, you indicated that your analysis was conducted from, quote, the laboratory stillness of the postmortem? Do you remember saying that?

A. I sure do.

Q. Thank you, sir. Would you agree that your investigation was a retrospective of what happened rather than an analysis of what the CO did at the time and why he did.

A. I would agree with the first part of that. My retrospective view is the light that I considered the CO's actions, and I only could surmise in those cases because we--I do not have the interview with CDR Waddle. I could only surmise why he did things, and draw that from my own experience, judgment and the other interviews. If I could comment just a little more, I----

Q. Certainly, sir.

A. I have the value of hindsight for everything that I did that's all I had to work with, because I came in after the event. That's not as much as we'd have liked to have had because hindsight is imperfect and it's artificial to some degree because of its lack of the dynamics of the event and the distractions of those that those dynamics brought you, but it is all I had to work with. And, I was charged by the Navy to do my job after the fact, so I tried to do that with integrity, honesty and balance

and to the degree that I could look in the mirror and feel that I've done my best.

Q. Yes, sir. When a Commanding Officer is placed in command of a United States Naval vessel, whether it be a submarine, or an aircraft carrier, or a mine sweeper, that person is placed in a position of authority and he is trusted to use his best judgment. Would you agree with that?

A. Absolutely.

Q. Do you have any reason to believe that CDR Waddle did not use his best judgment--any factual basis to believe CDR Waddle did not exercise his best judgment on 9 February 2001.

A. I have no reason to believe otherwise.

Q. Would you agree that much of what a Commanding Officer does requires the exercise of judgment, assessing the conditions he is faced with, and the circumstances of the situation he's in.

A. Yes, I would agree that that's the way COs operate.

Q. Sir, I'm going to probably work backwards through your testimony beginning with yesterday and probably finishing with today after I've gone through the first 2 days of testimony. So, I'm going to start with your testimony beginning on yesterday's testimony. During the course of your investigation, sir, did you--at the end of your testimony yesterday, you discussed ORM, Operational Risk Management, do you recall that, sir?

A. Yes I do.

Q. During the course of your investigation did you ascertain from interviews what CDR Waddle's three themes for his crew were?

A. I don't have a recollection of uncovering three themes for his crew, sir.

Q. During the course of your investigation, did you hear the terms referred to by witnesses that CDR Waddle was concerned with as safety, efficiency, and backup?

A. I did not uncover those phrases or terms in my interviews, sir.

Q. Sir---

A. But, of course, that doesn't mean that that's not what he emphasizes routinely with the ship.

Q. Yes, sir. You had a very limited window of opportunity to conduct this investigation. Would that be accurate, sir?

A. Yes.

Q. You were--you had some time restraints placed on you that made it difficult to do the things that you believed should be done to do a thorough and complete investigation, correct, sir.
A. Yes.

Q. Your investigation was a Preliminary Investigation, and, to the extent that was preliminary, you did the best you could in the time constraints you were provided, correct, sir?
A. That's correct.

Q. Would you agree that the themes like safety, efficiency, and backup sound like operational risk management for this command?
A. Yes, I believe safety, efficiency, and backup are all inherent in operational risk management approach to business.

Q. Do you believe it would be helpful for the members of this court to inquire of the crew whether or not CDR Waddle stressed those three themes?
A. Yes.

PRES: Mr. Gittins, I think just to be helpful here, if we could have the paralegal help you with that microphone, I think they have trouble receiving. We all have this problem, for us, we don't get close enough, and I don't want to interrupt anymore, but----

Counsel for CDR Waddle, party (Mr. Gittins): That's just fine, sir. It's a rare case when I've been--haven't been fully heard in court, sir.

PRES: Okay.

Q. You indicated during your testimony at the end of today and at the end of yesterday, that CDR Waddle had a successful ship. Is that accurate?
A. Yes.

Q. And he ran his ship in a directive kind of way. Would that be accurate, sir?
A. Well, that's my impression--preliminary impression, if you will.

Q. Sir, let me ask you, is it improper for a Commanding Officer to be directive in the operation of his vessel?
A. No.

Q. You would agree that there are many different types of styles for the Commanding Officer to adopt, correct?
A. I would agree with that.

Q. And from all that you have reviewed, it would be fair to say that CDR Waddle demonstrated a good deal of expertise in commanding his vessel and operating it?

A. Certainly.

Q. On the mishap day, there was a senior naval officer present onboard--that would be CAPT Brandhuber, sir----

A. Brandhuber.

Q. Brandhuber, I'm sorry. And that officer is one who has previously held command as Commodore of a Submarine Group. Is that correct, sir?

A. A submarine squadron.

Q. I'm sorry. A submarine squadron.

A. That's correct.

Q. And he also is the Chief of Staff of Commander, Submarine Force, Pacific, correct?

A. That's correct.

Q. And he would have had to hold that position, necessarily, would have held a submarine command of one type or another or more, correct?

A. That is correct also.

Q. A Submarine Squadron Commander by the very nature of his duties is required, when he's at sea to evaluate the performance of ship's crews and Commanding Officers, correct?

A. Correct.

Q. He is a person--a Chief--I'm sorry, a Submarine Squadron Commander is a person who would be experienced in evaluating crews and Commanding Officers. Would you agree that?

A. Yes I would.

Q. You indicated in your testimony that CAPT Brandhuber gave you the sense that he thought things were going too quick.

A. Yes.

Q. Sir, I have read the summary of the interviews taken by you and Commodore Byus and the notes reflecting those interviews. Can you tell me specifically what he said that indicated that things were going too quick?

A. I cannot. I can only tell you that my recollection of talking to him, perhaps not transcribed onto paper, is that he had a sense that things were moving fast. Now, too quick may be

an improper way to characterize the way he characterized it. Moving fast would be more accurate.

Q. Moving fast?

A. Moving fast and so, in general, CAPT Brandhuber was careful not to criticize CDR Waddle in his interviews. In general, he gave me the impression that they were being done--things were being done on GREENEVILLE in ways different than he would have done them, if he, CAPT Brandhuber, were the CO. But, that they were not necessarily unsafe by his assessment on an ongoing basis. In other words, as I talked about earlier, he did not sense a threshold was crossed or did he feel it necessary to lend his experience in judgment and advise the CO to change the way things were happening. He was rather drawing the contrast that he would not have done them that way, but he didn't necessarily consider them, at the time, unsafe.

Q. You would agree with me that the fact that a more senior officer might have done things differently does not necessarily mean that what CDR Waddle did in any given instance is wrong, correct. sir?

A. In generic terms, that's absolutely correct.

Q. Sir, what did get transcribed of CAPT Brandhuber's statements was that, although, and I'm paraphrasing partly your testimony here, you indicated that the OOD may have been pushed by the Commanding Officer, I'm not sure you used the word pushed is fair--that the OOD was being managed by the CO?

A. Yes, and I integrated several interviews that stated that, not just Brandhuber's. I think it's fair to say that CAPT Brandhuber felt the CO was being very directive with the OOD. But CAPT Brandhuber also said--but on the other hand, the OOD did not appear to have abrogated his responsibilities and just be a parrot. He was still being the OOD, and so, I think that CAPT Brandhuber got both of those ideas across.

Q. Yes, sir. Of those people that you interviewed, the only person who has had experience in evaluating the operation of ship's crews was CAPT Brandhuber, correct?

A. And who else was being considered in that question?

Q. The other individuals that you indicated you interviewed. Of the interviews that you conducted or reviewed, the only person who had experience evaluating Commanding Officers and their crews, was CAPT Brandhuber, correct?

A. That's correct.

Q. And it was CAPT Brandhuber's opinion that the OOD did not appear to abrogate his responsibilities to the Commanding Officer, correct?

A. That is what he told me in the interview, that's correct. And if I can add, the CO was generally being directive through that morning and afternoon prior to the collision with the Officer of the Deck. But, the CO was careful to use the Officer of the Deck as the intermediary with the watch team. In other words, it was clear the CO was not relieving the Officer of the Deck of the Conn.

Q. Yes, sir. For example, when the Commanding Officer had the vessel raised to the--he told the Officer of the Deck, make your depth, 58 feet, correct, sir?

A. I don't know the exact way that he directed that, but that's my assumption and my recollection.

Q. Yes, sir----

A. That he used the Officer of the Deck for all those orders--and that's a fairly important distinction because if the CO wanted to personally direct the ship without an intermediary, the Officer of the Deck would have announced formally and had logged that the CO had the Conn. That never did happen until after the collision when the Commanding Officer took the Conn to drive the ship in the proximity of the rafts for SAR, search and rescue.

Q. And under those circumstances, you don't take any issue with the Commanding Officer assuming the Conn, do you, sir?

A. No, and frankly, I wouldn't have taken issue if he had assumed the Conn earlier in the day. I mean, the CO can assume the Conn whenever he wants to drive the ship. They generally don't do that because it's disruptive in the training value for the subordinate officers, who are Officers of the Deck.

Q. Yes, sir. Sir, I would like to discuss for a moment the casualty, the AVSDU casualty of the vessel. You indicated that that's an important piece of gear. Would that be fair to say?

A. Yes.

Q. And the loss of that--it is just a repeater though, is it not, sir?

A. Yes.

Q. It repeats the same information that's displayed to the Passive Sonar Operator, correct, sir?

A. That's correct.

Q. And you thought it would be--in your opinion, there needed to be a compensation for the loss of that important piece of gear.

A. That is just my opinion. There's no requirement for the CO to do that.

Q. In the Naval Warfare Publication, there's a chapter about sonar casualties, correct, sir?

A. I'll assume that's the correct case.

Q. Yes, sir----

A. I haven't looked at that.

Q. Okay fine. What's the NWP, sir? Just kind of generic without----

A. Generically, NWP means Naval Warfare Publication. I think actually the publications are being transitioned to a new name, it's less user-friendly in English, but it's the significant library of tactical guidance provided to our ships, all of our ships, not just the submarines. Although there's some that are more applicable to submarines--a number of volumes.

Q. Yes, sir. Having been around the Navy for awhile, sir, would you agree that an NWP is similar to a NATOPS Manual for aviators?

A. It's similar, although NATOPS is not an area very familiar to me yet. I'm learning about it as my son is in Flight School, but I'm still a little light overall on NATOPS.

Q. Yes, sir. It's a manual that talks about operating procedures--the NWPs, are a manual or a series of manuals that talk about operating parameters, operating procedures onboard naval vessels, correct, sir?

A. Yes, sir.

Q. And tactical operations as well.

A. Roger. Break. I feel that NATOPS are probably a little more directive to a pilot than NWPs are to a CO or Officer of the Deck. I think the NWPs give you a lot of options to choose from. I think the NATOPS are a little more if you don't do this, you may crash. So, I think there is a difference between the two, although there are similarities as well.

Q. Yes sir. Well, in the NWP, there is a chapter that discusses operations with significant casualties to sonar. Are you aware that there's no operating discussion--discussion of operating the casualty to the AVSDU?

A. I wouldn't be surprised. I wasn't aware of that. I'm not surprised, it doesn't change my judgment on what I've said in earlier testimony because of using my experience in driving ships

to understand the value of that piece of gear, and the NWP's aren't perfect.

Q. Yes, sir. Well, you did ascertain that through the course of the day with that casualty onboard that the CO and the XO were cognizant of the sonar--that the fact that the AVSDU was out of commission and were visiting Sonar and making visits to that room, obviously for purposes of ascertaining the sonar picture. Is that fair to say?

A. That's very fair. There was no question, both the CO and the XO were personally helping to compensate for the loss of the AVSDU.

Q. Yes, sir----

A. In their actions.

Q. You indicated that in your experience, and I think you said, if you had been on deployment you would issue a temporary standing order. The term deployment suggests that there's a different procedure that you might follow for a day sail as experienced on the 9th of February. Is that--would that be fair, sir?

A. That's fair. Let me elaborate if I can.

Counsel for CDR Waddle, party (Mr. Gittins): Yes, sir.

A temporary standing order is an administrative tool and takes some time to generate and promulgate. This was a short underway, so I could understand not--not addressing the problem of material casualty of the AVSDU with a written document on that day. Because they may have felt, it just wasn't worth it as versus gain. There wasn't enough time to generate an administrative approach to promulgating new guidance.

But, I believe that certainly, once they knew this piece of gear was out of commission, they had an opportunity to, at least verbally, let the watch team know this was a concern to them, and they required some adjustments in the routine manner of business because of that. That's my judgment--that, had I been in their shoes, I would have done that. And it would have been my own mind, as a Captain, in my corrective actions and in my discussions with the Officer of the Deck to add a layer of necessary conservatism to our actions where that would normally play.

Q. And that appears to have been done by the CO and the XO, making frequent visits to the sonar, correct, sir?

A. I think that was one method they used to attempt to do that.

Q. Sir----

A. The question is, was that adequate?

Q. Yes, sir. With the benefit of hindsight?

A. Absolutely.

Q. After an accident.

A. Absolutely.

Q. Sir, would you agree that it was reasonable, under the circumstances, for CDR Waddle not to promulgate a temporary standing order with AVSDU being down?

A. For the brief underway that they had, absolutely. That's an administrative way to further reinforce direction he provides to the watch team. He can do that verbally for a short underway.

Q. Yes, sir. Would you also agree that it was reasonable for CDR Waddle to direct himself and the XO to make frequent visits to the Sonar Room to maintain awareness of the sonar picture? Under the circumstances he's faced with on that day?

A. That was a very reasonable thing to do as a CO and an XO, and appropriate.

Q. Repair of the AVSDU on the 9th of February, while at sea, would have required some disruption of the Control Room, correct, sir?

A. It would have been probably very difficult to do in general. Because, in addition to disrupting the central area of Control, I believe they would have had to, for some period of time, de-energize the rest of their sonar in the Control Room and essentially taken their main sonar out of commission period. So, there are significant reasons why it was probably reasonable not to repair that on that 1 day underway.

Q. Okay, sir. And you just answered my--oh, my next question would be, was it reasonable not to repair the AVSDU while underway on the 9th of February?

A. Yes.

Q. Sir, the policy--you discussed the role of the Chief of Staff onboard the GREENEVILLE and you talked about policy memorandum I think in response to one of the member's questions that may or may not have been followed on 9 February when CAPT Brandhuber embarked onboard the GREENEVILLE. Do you recall your testimony about that?

A. I recall the Court brought that policy memo up and I responded to questions on it.

Q. Yes, sir. On 9 February, sir, are you aware that RADM Konetzni was in Japan, and the Chief of Staff would be the Acting Commander, Submarine Force, Pacific?

A. Yes.

Q. That would have changed his role onboard the GREENEVILLE, would it not, sir?

A. Instead of being just the Chief of Staff he was the Acting Force Commander, in other words?

Q. Yes, sir.

A. Yes.

Q. And an Acting Force Commander is an officer who is eligible for command and, in fact is in command, in an acting capacity. Do you remember that, sir?

A. Yes.

Q. Under those circumstances, on 9 February, CAPT Brandhuber was then the Senior Officer Present Afloat pursuant to the United States Navy Regulations, correct, sir?

A. For submarines, I believe he was. But I'm not sure--I think the question needs to be more fully evaluated in terms of the Pearl Harbor area for SOPA. That's generally an area connotation, not just on a single vessel. And so, when the vessel GREENEVILLE is in local operations, I don't think the general Pearl Harbor region would consider Brandhuber SOPA.

Q. He would have been the senior officer present though, correct, sir?

A. Yes, on the GREENEVILLE that's the case.

Q. Okay----

A. My guess is that SOPA translated between RADM Conway--to RADM Conway from RADM Konetzni when RADM Konetzni went on travel, but I'm not sure of that.

Q. Yes, sir. As the senior officer present, CAPT Brandhuber would have a duty to monitor the safe operation of the vessel, correct, sir?

A. Certainly.

Q. To your knowledge, CAPT Brandhuber never raised any issue of safety during the course of this operation, correct?

A. Prior to the collision, that's correct. After the collision, he was worried about the SAR and involved in helping the ship and that, so safety is part of that and----

Q. Yes, sir. My focus is--as was your direct testimony on the point to the collision, up to the collision, sir----

A. Correct.

Q. Reframing the question to, from the time he embarked to the point of the collision with the EHIME MARU, to your knowledge, CAPT Brandhuber raised no issues of safe operation of the vessel with the Captain or any other member of the boat, is that correct?

A. That's correct. As far as I know he did not. And based on my interviews with him, he never felt that a safety problem had arisen that he needed to interact with CDR Waddle before the collision.

Q. In fact, in your interviews, CAPT Brandhuber indicated he was impressed with the professionalism of the crew and the way they operated the vessel, correct?

A. That's correct.

Q. They appeared to have done this before?

A. That's correct. I heard that statement from CAPT Brandhuber and others in the crew, that this seemed to be going as before.

Q. Yes, sir. Sir, you indicated during your testimony yesterday that there was some log keeping weaknesses onboard the GREENEVILLE?

A. Yes.

Q. You indicated that there was no acoustic work tape maintained in the Sonar Room?

A. Yes. Now, I don't know if it was maintained and then later destroyed or not--or inadvertently lost. It was not able to be provided to me and through our interview process, the ship said that it did not have one.

Q. Yes, sir. The acoustic work tape is a system that is usually used for mission-related events, correct, sir?

A. Well, when you say usually, you mean is that the Fleet's practice?

Q. Let me rephrase the question, sir. The purpose of that acoustic work tape is not--is generally for identifying contacts and reconstructing what Sonar observed in a particular situation, is that accurate, sir?

A. That's probably its most important purpose, but not its only one.

Q. Yes, sir.

A. For example, the ship may have a transient that's created by own ship, and you would use this work tape to go back and try and analyze what caused that transient and how you can eliminate it, so you're not a noisy submarine. So, there are own ship and other contact reasons why you would always want to operate that tape at sea.

Q. Yes, sir. The non-operation of the acoustic work tape had no impact on this collision, did it, sir?

A. That's correct. I think, in general, I can make a broader statement than that. The data collection problems and challenges I faced, none of them were a cause for this collision, it just made my ability to reconstruct afterwards more difficult.

Q. Yes, sir. The data--and that was the point I was getting at, the issues that you observed caused you some difficulties in reconstruction, they didn't have any impact on whether this collision occurred in the first instance, correct, sir?

A. With one exception. The Contact Evaluation Plot is a good tactical device for the Officer of the Deck and others to use to manage the contact picture and avoid collision. And that--the paucity of real useful information on that plot for the last hour before the collision would have been a contributor to a ship eventually getting into a collision that it would want to avoid.

Q. The----

A. But, otherwise the answer is, yes.

Q. The Fire Control Technician of the Watch is the individual who's responsible for maintaining that Contact Evaluation Plot, sir?

A. That's correct, directly.

Q. And you did, as part of your evidence gathering process, obtain the CEP, correct, sir?

A. Yes.

Q. And that plot shows the plot of the own vessel, correct, sir?

A. Correct.

Q. So, the CEP was being maintained at least with respect to the own vessel changes in course, correct, sir?

A. Yes, there was some information on the CEP. It was not a zero piece of--a blank piece of paper.

Q. Yes, sir----

A. The quality of the information on the CEP and the amount of information was the area of criticism.

Q. Yes, sir. The fact that the sonar contacts in specific were not plotted?

A. Yes.

Q. Sir----

CC: This is actually already part of enclosure (1). If you want to mark it, we'll just mark all of these court exhibits next in order, so the reporter doesn't have to separate between different kinds of exhibits. If you want this marked, Mr. Gittins, we'll mark this next in order.

Counsel for CDR Waddle, party (Mr. Gittins): Yes, sir.

CR: Court Exhibit 21, sir. Can I ask you what this is?

CC: The CEP.

Questions by counsel for CDR Waddle, party (Mr. Gittins):

Q. Sir, I'm going to hand you what's now been marked investigative Exhibit 21--Court Exhibit 21. I just ask you to have a look at it and tell me what it appears to be.

A. What it appears to be is the CEP, an excerpt.

CC: Admiral, there's a lot of confusion. This is an important point for Mr. Gittins and CDR Waddle, so let's just get the microphones squared away. I think there's some confusion behind you. When we take a break, bailiff, make sure the mikes are working right, okay? I apologize. Go ahead.

Counsel for CDR Waddle, party (Mr. Gittins): Not a problem, sir.

Q. That appears to be a copy of the CEP from the USS GREENEVILLE on 9 February 2001, is that correct?

A. It appears to be a copy of the CEP from the 9th of February, correct.

Q. And the--it does indicate that the ship's movements are plotted through the point of collision, correct, sir? Or at least very near in time to the collision.

A. Bear with me while I study it in some detail.

Q. Yes, sir.

A. Well, here's my problem in looking at the data. The hour in question, I believe, is this general area where we don't have the data plotted. We have kind of a--in other words, there is data

on here, but from the last hour leading up to the collision I don't see the contact data on here.

Q. Right, sir. I'm talking about the ship's data is on--the own ship's data is on there.

A. Oh, I'm sorry. I've been looking diligently to find the contacts on here for that last hour. I didn't think they were there and I still don't see them, but certainly the ship's--the ship's course is on here.

Q. I wasn't trying to----

A. Okay. And again I just want to emphasize the plot was being maintained, but the amount of time put into maintaining it appears to have not been adequate to keep the continuous contact picture on there for that hour before the collision.

Q. Yes, sir.

A. In fact, I have testimony from the FT of the Watch that he gave up at some point maintaining it, because of the number of people in Control.

Q. Yes, sir. But it appears that he wasn't able to get to the plot, to plot own ship position for that--some period of time, correct, sir?

A. Correct.

Q. Sir, what is SLOGGER?

A. SLOGGER is the term used for the automatic digital recording system of the sonar and fire control on the BSY-1 A-RCI Phase II system that the GREENEVILLE has.

Q. The use that was made of SLOGGER in this case, would that--would it be fair to say that it was like, not exactly like, but similar to the use made of an aircraft's black box after an aircraft accident?

A. That is sort of the sense of how we used it after this accident, yes.

Q. It provided data points from which you could reconstruct the accident in some ways, correct, sir?

A. That's correct.

Q. So, in addition to the CEP plot, with the own ship's data on it, there was also an electronic system that served as a backup that you were able to use to reconstruct its movements and contact data, correct, sir?

A. Yes, that's correct.

Q. To maintain the CEP own ship's plot, the Fire Technician of the Watch would have had to maneuver himself from his console to the front of the Control Room, presumably through the distinguished visitors that you described and their positions earlier in your testimony, correct, sir?

A. Yes, that's correct. Of course there were alternatives if other people were to maintain that plot. And, as I mentioned in my testimony earlier, the ship has the option of stationing additional watchstanders in order to meet their requirements when the pace of events or other situations, such as the location of people in Control, prevent the normal manner of accomplishing it.

Q. Yes, sir. Well, during the course of your investigation, sir, did you ascertain why, if the Fire Technician of the Watch was able to plot own ship's position, he did not plot sonar contact data?

A. I think that he felt the pace of events had increased, plus the people that were between him and the plot had increased in number to the point where he was not able to do that when he looked at the other things that he had also to do. So, I think the FT of the Watch made a judgment that he was going to shut down that duty to do higher priority missions in that period of time.

Q. Those higher priority missions would have included classifying and obtaining solutions for sonar targets; correct, sir?

A. Correct. And I agree, that's a high priority mission.

Q. Would you agree that to the extent that the Fire Control Technician of the Watch did not maintain the CEP, but was engaged in working solutions for contacts, that that was an appropriate use of his time?

A. Focusing on that one individual alone, yes. But I hasten to add, the Officer of the Deck is required to make sure that plot is maintained. It has a tactical value to him and to the Captain, and the standard isn't just maintain it when it's convenient for the FT of the Watch to do so. The standard is maintain it. And so you add in resources as needed to keep the standard met is the expectation I would have.

Q. Yes, sir. The information that is displayed on that CEP with respect to contacts is also available to the Officer of the Deck and the Commanding Officer by looking at the Fire Control panels on the starboard side of the vessel; correct, sir?

A. Yes. In general the same basic information perhaps in a different format of display is available by using fire control.

Q. Given the experience of the Officer of the Deck and the Commanding Officer, the format of the presentation of data would not have been an impediment to those officers understanding what was presented, correct, sir?

A. I think that's a reasonable assessment. Can I add something here?

Q. Certainly, sir.

A. Some of the submarines in the fleet have the new version of the CEP plot, which is electronic and computer-aided, and much more user friendly than the paper CEP plots we've been laboring under all these years and the GREENEVILLE still has. And the fleet's experience that has the advantage of this new electronic version is it's extremely valuable as an additional display augmenting the displays on fire control. So I think the submarine force as a whole is looking ahead and investing in technology to make the plot more user friendly, to take less of the Fire Control time up--Fire Control Technician's time up--but still is a value to the ship of a safety and tactical mission. So, we're looking at a plot that's being overtaken by IT technology and upgraded to be easier to use and less time consuming to use. Nevertheless, the point I'm trying to make is there's an enduring value to this device of displaying the contact information in the CEP format.

Q. Sir, contacts must be reported to the Officer of the Deck via the 27MC by Sonar Watch, correct, sir?

A. That's correct.

Q. And the management of those contacts is the primary duty of the Fire Technician--Fire Control Technician of the Watch, correct, sir?

A. Let me make sure I understand what you mean by management. The----

Q. I'll define it for you, sir.

A. Okay.

Q. When I say management, I mean taking the sonar data that is obtained and obtaining a solution for range and bearing to the ship. To the GREENEVILLE.

A. Range, bearing, course, and speed, that's right.

Q. Yes, sir.

A. Yes, that's true.

Q. That is the primary duty the FTOW, correct, sir?

A. That's correct.

Q. And it would be a reasonable thing for the FTOW to not maintain that plot while he was working solutions for contacts, would you agree with that, sir? In managing his time.

A. The CEP paper plot is very distracting to the FT of the Watch's manipulation of the electronic fire control system. And many ships have found it necessary when contact management is particularly important, such as going to periscope depth to augment the person who maintains that CEP plot to be a different person so that the standards are met while you're not distracting the FT of the Watch from efficient manipulation of the electronic fire control system.

Q. Yes, sir. But as you previously testified, two or three contacts would not be considered to be a difficult workload for the normal run-of-the-mill FT1, qualified Fire Technician of the Watch, would you agree with that, sir?

A. I would agree that two or three contacts should be able to be manipulated on the fire control system, and kept up adequately on the CEP plot by the FT of the Watch, yes.

Q. Yes, sir. The Officer of the Deck and the Commanding Officer, if he's in the Control Room would be aware of contacts reported because of the announcement over the 27MC, correct, sir?

A. Absolutely. I think, in general, it's fair to say the Officer of the Deck and the Captain in Control would be fully aware of the sonar contacts, and their parameters, by frequent looking at the fire control system and listening to the sonar reports. And if they had the AVSDU, using that as well.

Q. During the course of your investigation, sir, you did not from any source determine that the Commanding Officer or the Officer of the Deck failed to review the contact picture as it was displayed on the Fire Control panels, correct, sir?

A. I don't know how to answer that because I wasn't able to interview those people. And the existing interviews did not fully elaborate in that area. So, that would be grounds for the Court to consider under further testimony.

Q. That would be a reason to have benefit of the testimony of the Commanding Officer, the XO and the Officer of the Deck?

A. That would be one of many reasons.

Q. Yes, sir. I'm going to come back to the contact picture a little bit later on, sir. I just wanted to jump in there a little bit because you talked about it in a several places in your testimony. Right now I'd like to turn to the training of the vessel, and the issue of what training was conducted or might have been conducted while GREENEVILLE was at sea with DVs embarked. During the course of your interviews of ship's witnesses, sir, and review of those interviews that you did not conduct, did you determine that approximately 20 members of the crew went with the Sonar and Weapons Chiefs and the Weapons Officer for training at the attack trainer on the 9th of February?

A. No, I did not. I had no investigation into why anybody was left in.

Q. Would you agree that it would be appropriate training for members of the crew to be taken to the attack trainer under the supervision of the Sonar and Weapons Chiefs and Weapons Officer for training, even if the ship is at sea?

A. Taken out of context that could be very reasonable.

Q. Well, in the context of this case there was no overriding mission requirement for the USS GREENEVILLE on the 9th of February, correct, sir?

A. There was -- would you repeat the question?

Q. On the 9th of February, other than embarking distinguished visitors and taking them for a demonstration of the capabilities of the GREENEVILLE, there was no other mission that would have required a full crew compliment; would you agree with that, sir?

A. Yes. I think it would have been reasonable to leave crew members in for training, as well as liberty.

Q. Yes, sir. Well, -- liberty would be appropriate, but it would be even more appropriate and beneficial to the Navy and the crew to conduct training at the attack trainer, would you agree with that, sir?

A. I -- I think that's a very reasonable thing to do. My only caution is that those that do go to sea need to be in efficient flavors and numbers to fully man the watchbill.

Q. Yes, sir. And one of the -- one of the judgments that is reposed in a Commanding Officer of a nuclear submarine is making those decisions about who would be appropriate to leave for training and who would be appropriate to take to sea on any given evolution; would you agree with that, sir?

A. Certainly.

Q. You testified earlier that even with the members of the crew who were missing; it was your opinion, based on your investigation, that CDR Waddle took a highly qualified crew to sea on the 9th of February, 2001, correct, sir?

A. Absolutely.

Q. Did you at any -- during the course of your investigation, sir, determine whether or not PQS qualification cards were signed off during the course of this evolution with distinguished visitors?

A. I did not look in that area. I didn't have time, and I don't know the answer.

Q. Would you agree that that would be a valid training -- that, that would provide valid training to have sailors PQS cards signed off during the course of this DV embarkation?

A. I'm a proponent of using every underway for training and qualification. I'm sure the GREENEVILLE is adhering to that. I think that's always going to be a subsidiary reason to go to sea on a ship, so their primary mission that day was embarking visitors, but I think they got value out of the training qualification opportunity and going to sea for their crew. I grant you that.

Q. Yes, sir. Sir, in your discussion about the training of the vessel, you indicated that the GREENEVILLE had been in a maintenance period for some period of time prior to going to sea.

A. Yes. And to be honest, I don't know the direct sequence. For example, they may have had substantive sea time after that maintenance and before this underway. I just don't know. I think the maintenance occurred in the end of the calendar year preceding the end of 2000, for roughly a two month period, and in a period called selective restricted availability, and they've gone beyond that maintenance period. Obviously it had some sea time as you would give a ship at the end of maintenance period to regain proficiency. This is, I'm not implying the first underway.

Q. You're not implying that the 9th of February was its first underway following a two month maintenance period, is it?

A. Absolutely not. I'm assuming it was not.

Q. Yes, sir. Did you know, sir, that on January 4th the GREENEVILLE left Pearl Harbor--I'm sorry, January 6th GREENEVILLE left Pearl Harbor for Alaska to conduct acoustic trials?

A. I didn't know that, and I--I'm not surprised to know that.

Q. Yes, sir. Were you aware that after those acoustic trials the GREENEVILLE moved from the Alaska area to the east -- I'm sorry, the West Coast of the United States for an eastern Pacific training cruise?

A. Vaguely was aware that they had some eastern Pacific time earlier this calendar year. I didn't pursue that in interviews, but I heard that in peripheral conversations from the people working with me in the investigation.

Q. Sir, the records indicate that the GREENEVILLE was in port from 22 to 26 January. That would suggest that the GREENEVILLE was not in port the other days of the month of January. Would you consider that to be a substantial period without at-sea time?

A. Yes.

Q. And would that be the type of at sea time that would enable you to--enable a crew to come back up to proficiency?

A. Yes.

Q. And the operations of the vessel on the 9th of February, at least with respect to high-speed, high angle maneuvers indicate that the ship was proficient and the crew was proficient in operating the vessel, correct, sir?

A. Correct.

Q. You interviewed Fire Technician Third Class Brown, sir. Did Fire Technician Third Class Brown indicate to you that he was the Fire Technician of the Watch during the lunch break?

A. I--it was either a lunch break or a, quote, smoke break, where he allowed the on-watch Petty Officer to get a cigarette off watch. It was one of those two reasons that he assumed the watch briefly.

Q. When you interviewed Fire Technician Third Class Brown, I'm sorry, Fire Control Technician Third Class Brown, did he inform you that when he relieved the Fire Technician of the Watch, the OOD told him specifically to provide forceful reports on contact picture?

A. My recollection is that that was provided by an interview I did not conduct, but was the source--the source was either the Officer of the Deck or Petty Officer Brown or somebody. I remember that statement, though, but I don't think I personally developed it in an interview. But I do remember that statement.

Q. The OOD making that statement to the oncoming Fire Control Technician would be an indication of additional compensation for the AVSDU casualty. Would you agree, sir?

A. I would give more credit than that from the Officer of the Deck for making that statement. I would say it would always be

appropriate because it shows an emphasis on concern for ship's safety, regardless of whether the AVSDU is working or not. I think it's a good type of statement the Officer of the Deck is making to watchstanders.

Q. That would indicate the safety of the ship was a significant consideration by the OOD and possibly the whole crew, correct, sir?

A. I'm sure safety was a significant consideration to the entire crew. I'm not questioning that.

Q. Yes, sir. During the course of the interviews that were conducted during your investigation, sir, did you ascertain whether or not Fire Technician Third Class--Fire Control Technician Third Class Brown provided that pass down when he was told by the OOD to his relief following his period on watch?

A. I would assume he did, but I do not know personally whether he did or not. I don't think I developed that in interview.

Q. After Fire Control Technician Third Class Brown was relieved by the incident Fire Control Technician, he remained in the Control Room area, correct, sir?

A. Possibly. I don't remember. Or--or if I ever knew. But it is possible.

Q. He was one of the people you interviewed and---

A. He may have been the individual who then assumed the new duty of routine correction of charts. If that's my recollection, there was a person who went to Control and was conducting chart correction. It may be that I'm recollecting that was Petty Officer Brown.

Q. Correcting charts would not be a normal duty for a Fire Control Technician, would it, sir?

A. No, no there was somebody, not on watch, perhaps an off-watch Quartermaster is who I'm thinking of and I may be throwing out--inadvertently throwing out a red herring here.

Q. Yes, sir. Your interview would probably reflect better what Fire Control Technician Third Class Brown told you, would you agree with that, sir, than you recall at this time?

A. Yes, I don't recall exactly the interview, but certainly what I transcribed would be accurate to what he told.

Q. You spent some time discussing distinguished visitor embarks, sir. Did you ascertain when GREENEVILLE had last conducted a distinguished visitor embark at sea before 9 February, 2001?

A. I don't know when their most recent one was. I know they did one in the summer of 2000, as I recollect. And there may have

been one more recently than that. I got the impression that GREENEVILLE is frequently tapped to do this, when she's available, because she's good at it.

Q. On that point, sir, one of the purposes for distinguished visitor embark is to show off the Navy and submarines, would you agree with that, sir?

A. Yes.

Q. And if GREENEVILLE was frequently selected for that duty, that would suggest that GREENEVILLE had something to show off, would you agree with that?

A. I certainly would.

Q. And that would also be indicated by the fact that the competence of the vessel would also be indicated by the fact that RADM Konetzni, prior to 9 February, had decided to hold his change of command onboard the USS GREENEVILLE, would you agree with that, sir?

A. No, I would say that he had a lot of confidence in the competency of GREENEVILLE. The reason he picked the GREENEVILLE for change of command was probably a little more incidental to her being available, a modern ship to be a backdrop. I don't think that when principals pick ships for change of command to occur it isn't always because they're elevating that ship to a level of esteem that's made that choice. You'll have to ask RADM Konetzni that.

Q. Yes, sir. But in your testimony 2 days ago isn't that one of the things that you said about the competence of the GREENEVILLE, it was selected to be the--the platform, I think you used the word platform for the change in command for RADM Konetzni, Commander, Submarine Forces, Pacific?

A. If I did say that, I would like to change that answer. And I would like to say that first of all you'll need to really ask RADM Konetzni why he chose GREENEVILLE. But I think it's immaterial. I would like to get the point across--I think RADM Konetzni thought very highly of GREENEVILLE, independent of whether they were going to do a change of command on her.

MBR (RADM SULLIVAN): Mr. Gittins, RADM Sullivan, I believe I was the one during the first day in court that mentioned that GREENEVILLE selection as a platform was the change of command. I don't believe it was RADM Griffiths. I mentioned it.

Counsel for CDR Waddle, party (Mr. Gittins): My recollection was that if you asked the question, sir, he agreed with it. I think that's a fair characterization of his testimony.

WIT: I'm trying to say RADM Konetzni thought highly of GREENEVILLE, independent of change of command platforms.

MBR (RADM SULLIVAN): That's what I'm trying to say.

Counsel for CDR Waddle, party (Mr. Gittins): Check--check.

Questions by Counsel for CDR Waddle, party (Mr. Gittins):

Q. You spent a little bit of time, sir, discussing the submarine test area on the chart. I don't think we need to pull the chart out. Do you have a recall of that?

A. Yes, I do.

Q. Of that little submarine box, test area?

A. Yes, I do.

Q. You made reference to it as something maybe back from the '50s. In fact, that was a test area for Thresher class vessels. Were you aware of that, sir?

A. No, but I am certainly a believer. I mean it's--if your point is nuclear submarines have also used that area, I'm not surprised, but I think our emphasis on that type of approach is diminished now.

Q. Yes, sir. In fact, it's on the chart because it's an area that allows a submarine to be operated, tested, in a place that has a sandy bottom, that is above crush depth so that the submarine could be recovered, does that sound like an appropriate use of that area?

A. It does. And, you know, I certainly am not comfortable--I fully understand why that area was ever created, I just know it's not emphasized in use right now. But that certainly rings true.

Q. Yes, sir.

A. That was a general lesson submarine force took after the loss of the Thresher. To choose sea trial areas wisely so that should she be stricken and go to the bottom, she'd still be intact.

Q. Yes, sir. And possibly be able to rescue the crew?

A. Right.

Q. In that area as well, when you talked about the sea area in which GREENEVILLE was operating, were you aware that the Honolulu Maritime Shipping Office has characterized traffic in the area in which GREENEVILLE was operating as a very high traffic area?

A. That's consistent with the type of information I obtained from the Coast Guard. Although I didn't have it in that vernacular, but that's very consistent with what I uncovered.

Q. Yes, sir. Would you agree that Commanding Officers and crews were operating submarines in those areas on a day-in/day-out basis outside of Pearl Harbor would probably be aware of the likely shipping that they might encounter in that area?

A. Yes, I would.

Q. And that would be a -- one of those considerations that a Commanding Officer would take into consideration when he is exercising his inherent judgment as a Commanding Officer?

A. Absolutely. As I've stated in testimony, I don't believe that the area that the ship was operating in, per se, was a contributor to making the collision more likely. I think it was a reasonable area to operate in.

Q. Yes, sir. Sir, do you know what Penguin Bank is?

A. In general, yes.

Q. I'm sorry, Penguin Bank. What is Penguin Bank?

A. It is a shoaled area. Which means it's shallower than, for example, the test depth of the submarine to operate in. That's in the upper right-hand corner, if you look at the chart of the area assigned to GREENEVILLE, it did intrude into some of the area and GREENEVILLE needed to operate prudently to avoid inadvertently going into those shallow areas.

Q. From the point of the collision, or from the point where GREENEVILLE began its left-hand turn, a left-hand turn at the time GREENEVILLE made it would avoid Penguin Bank. Would you agree with that?

A. I would go farther. I would say that all of her operations submerged were deliberate to avoid Penguin Bank.

Q. Yes, sir. In your testimony you indicated that the left-hand turn the GREENEVILLE made just prior to the collision was to get back to Pearl Harbor. Is it -- do you think it's also likely that that left-hand turn may have been made to avoid the shallow water of Penguin Bank.

A. There could have been added beyond reasons than just getting back to Pearl Harbor. I think she could have turned right as well as left, but perhaps there was more conservatives in turning left from a safety standpoint. I would certainly be willing to grant the Skipper that.

Q. Yes, sir.

A. I didn't know that was a consideration at the time, but I could see that as a reasonable one now.

Q. Yes, sir. The considerations that as to why CDR Waddle may have made the decision to turn left rather than right, or to continue straight ahead would be matters that would be of benefit to your investigation, would you agree with that, sir? Or would have been?

A. Actually, I was never suspicious of why left and not right. Obviously left resulted in a collision, but that's hindsight. The ship didn't think it was in the proximity of any other vessels, so because of that I was not suspicious of whether left was a bad decision or not. I looked at that as an incidental decision influenced by the direction they were turned towards homeport. In fact, the course was more significant to me than the turning left versus turning right to get to that course. It would have been a longer turn to turn right to steady up from that course, but these ships turn pretty quickly, so I looked at it as almost an incidental decision in the way I viewed the investigation. There may be more to it than that, but the Court can examine the testimony.

Q. Yes, sir. I believe, and correct me if I'm wrong, the suggestion was that CDR Waddle may have been in a hurry to get back to Pearl Harbor. And you suggested that he turned left because that was the quickest way to get back to Pearl Harbor. Would you agree that there may have been other reasons why he turned at that time?

A. First of all, I'll answer the second part of that question, the real question is yes. But I want to elaborate. I was never critical of his assuming the course ordered at three-four-zero, I thought that was a reasonable course, and I thought it was a reasonable thing to want to get heading back towards Pearl Harbor. I don't look at that decision as related to the urgency issue. I look at that as a reasonable decision. The urgency issue has to do with some of the duration of the steps preparatory to the emergency blow that allow you to develop a contact picture.

Q. Yes, sir.

A. So actually I am not critical at all of the decision to go to course three-four-zero, I think that's what I would probably have done.

Q. Yes, sir.

A. That was the direction to head home.

Q. With respect to the positions of distinguished visitors in the Control Room in the moments, in the time before the collision, other than your statement, your earlier testimony that they were passive barriers, that, that the distinguished visitors in no way contributed to this accident. Would you agree with that, sir?

A. Yes. Well, let me add one thing, though. They're just one more factor to the crew, XO on down, to consider when determining whether to provide advice to the Commanding Officer in that public forum. And does it make an infinitesimal amount of difference to the XO for example to advise the CO of a recommendation, or does it make a large amount of difference to the XO that the distinguished visitors are there, I don't know. Maybe it's no difference, maybe it's some. So they may have had a factor in the decision that the crew went through routinely on whether they should provide advice to the Captain.

Q. Yes, sir.

A. So that might be the other role in play and that's hard to judge.

Q. And because you had not had the opportunity to personally interview the XO, Officer of the Deck and Commanding Officer, you were not able to fully explore that issue; correct, sir?

A. That's correct.

Q. And it would--would you agree that it would be beneficial to--it would have been beneficial to your investigation, and probably would be beneficial to this investigation to have the Commanding Officers, Executive Officers and Officer of the Deck's testimony about those issues?

A. I think that would be very helpful.

Q. I want to go back 2 days now, sir. Although I haven't covered everything in your testimony yesterday, I'm going to try to incorporate all of the issues about the contact management, periscope depth, those issues all at one time so we don't have to go back and forth, sir. The "Papa Hotel" time, you indicated that was a time when -- for administrative purposes, related to the operation of the Pearl Harbor, harbor, a ship should be at the entrance of the harbor so the assets of the harbor can be utilized appropriately. Is that fair?

A. Yes.

Q. It's not a time written in stone, correct?

A. It can be changed through effort, so it is not written in stone.

Q. In--on the 9th of February, 2001, how many other vessels were at sea at the time GREENEVILLE was? If you know, in the local operating area.

A. I have honestly no idea.

Q. The flexibility of the "Papa Hotel" time would be dependent in a large measure as to the expected shipping and traffic at Pearl Harbor on that day, around that time?

A. That's a reasonable assessment.

Q. If there was no other significant shipping or vessels at sea, it would have been reasonable for CDR Waddle to believe he could slide his "Papa Hotel" time to make best use of his time at sea; would you agree?

A. I'm--not necessarily. Let me answer the way I truly feel about this.

Q. Yes, sir.

A. That when you're talking about issues, fundamental to ship's safety, "Papa Hotel" time is way down in the grass. No matter how many ships are at sea that day, and no matter how much effort is required to change it. Obviously there may be a longer delay for the ship if there are a lot of ships at sea. And it's disruptive to try to find a new slot for GREENEVILLE to come in, but I'm sure the Skipper would not be deterred in changing it if he felt he needed to, for safety.

Q. I think you answered my next question too, sir. Thank you.

A. I know the Skipper and all Skippers have an ability to change their ship's schedule when they need to.

Q. Yes, sir. The conversations about time that you uncovered during your investigation, the XO bringing to the attention of the Captain that Papa--that they weren't going to make "Papa Hotel" time, that suggested---

A. I didn't say they weren't going to make it. I said that they need to get on with things in order to be able to make it.

Q. Yes, sir. Well, at the time of the collision could they have made their "Papa Hotel" time, sir?

A. No.

Q. So, even if they had surfaced without incident, they would not have made "Papa Hotel" time?

A. That's true.

Q. About how much would they have missed it by, sir?

A. I'm estimating about 45 minutes. But that's a rough order of magnitude because that's about how far behind their schedule they were.

Q. Yes, sir. The Commanding Officer's conversation with the XO indicated that Commanding Officer had it under control, he wasn't--that that was not a concern to him. Would you agree with that, sir?

A. I--you know, it's very hard for me to know what the CO really meant when he said that. But my -- my true feeling is that the CO was saying I am aware of the, the influence of time on what we're doing with our ship. And I'm not trying to say he was going to make it all catch up. I think he was just saying I appreciate the input that we're behind our schedule, and I'll take that into account with my subsequent actions. And that's my assessment of what he meant.

Q. Okay. And, and that's based on the fact that you've not had the opportunity to question the Captain?

A. He could very well have already decided he was going to come in later and make the subsequent arrangements to come in later. On the other hand, I see this kind of hurriedness on some of these key steps, and so my logical connection to being generally behind schedule and trying to catch up was my assumption. Maybe that's not the case and interviews would be helpful to find out further.

Q. Yes, sir. If your assumption is wrong, that, that places the Commanding Officer's action in a different light, doesn't it?

A. Perhaps a less understandable light, because I still feel some of these steps were abbreviated, and I thought I understood the reason, and if that reason has gone away then I understand even less why he would have done that.

Q. Yes, sir.

A. But, yes, it would place them in a new light.

Q. Thank you, sir. And so, you would agree that because there may be other considerations it would be beneficial for this inquiry to have the benefit of the Commanding Officer's testimony, would you agree?

A. As I've said before, yes.

Q. Yes, sir. You indicated that the schedule may have been delayed in part while they were at sea with the distinguished visitors, that they got behind schedule? GREENEVILLE.

A. Yes.

Q. You would agree that the Commanding Officer's personal touch was important with these DVs?

A. I think that was the most important thing of the whole trip.

Q. Yes, sir. So, not making--not keeping to a schedule is a less important consideration than the overall view that the civilians would have of the operation of the vessel and the hospitality of the crew and their competence in operating the vessel, would you agree with that, sir?

A. Yes, absolutely.

Q. And based on your knowledge of CDR Waddle through your investigation, do you have a sense of whether or not CDR Waddle would have been aware that that was the primary goal for this distinguished visitors embarkation?

A. I would have made that assumption before I ever arrived on the island. I still feel that way. He knows how to prioritize. That's why he's a Captain. He would never be where he is if he didn't understand how to prioritize.

Q. Yes, sir. Sir, do you know if -- I'm going to start discussing the reconstruction a little, starting with the EHIME MARU, sir. The EHIME MARU, do you know if it was actually radiating radar emissions?

A. The Master said that they were radiating at a 12 mile scale which is their maximum scale on their radar. And this was in an interview with the Master through the NTSB, so that's how I know it. I know it by no other means. But I assume the Master was very knowledgeable of that issue.

Q. Are you aware if the Master was on the bridge at the time?

A. I believe he was on the bridge is my understanding, yes, from his interactions with the NTSB.

Q. Are you aware whether or not the EHIME MARU was--had its fish finder operating?

A. The Master reported it was not operating.

Q. Did he say why?

A. No.

Q. What's the----

A. I mean, I'm not aware of whether he said why or not. I don't know if he said why.

Q. I understand. What would the significance of operating a fish finder be on detection of a surface vessel by a nuclear submarine of the GREENEVILLE class?

A. Well, it's a fathometer. Its dual purpose is finding fish and acting to determine the water depth. And its a source of

energy that would aid the GREENEVILLE in detecting the EHIME MARU, and would also aid in classifying the EHIME MARU if it--the characteristics that are unique to fish finding sonars opposed to generic fathometer. It would aid in classifying it as a commercial fishing vessel as well as a surface vessel.

Q. Isn't it a fact, sir, that if the GREENEVILLE had intercepted, I guess would be the word, detected----

A. Detected.

Q. Detected a fish finder an alarm would go off in the Control Room?

A. Well, there would be no--well, actually there might have been the alarm literally in the----

Q. WLR----

A. WLR-9 system. But even if the alarm had not gone off, the sonar system and operators would have reported it as a significant tactical input of value to the OOD and the CO. So, whether the alarm occurred or not, I think it would have been an important team event in the minds of the operators of the ship.

Q. Yes, sir. The FAA radar that you indicated was used in part to reconstruct the EHIME MARU's track, that didn't have any time or bearing data on it, did it?

A. I don't have a lot of facts and understanding of how the FAA radar played into the current status of the reconstructed track. My general understanding is that it came into the game after I completed my investigation and tended to confirm our other sources of data on the last 3 miles of the track of the EHIME MARU.

Q. Okay, sir.

A. I'm not sure it changed the track, just confirmed it is my understanding.

Q. Used as an aid to backup the data you have from other sources?

A. That's my understanding. Although, further testimony may bring more clarification in that area.

Q. Yes, sir. With respect to the operation of the USS GREENEVILLE, a watchbill was--would have been, in the normal course, produced for an at sea evolution. Would you agree with that, sir?

A. Yes.

Q. That would be pretty much standard throughout the fleet?

A. Yes.

Q. And that watchbill was not included in your Preliminary Inquiry?

A. No.

Q. Were you aware that the USS GREENEVILLE sent the watchbill over to Captain Byus' office?

A. No. I was under the opposite impression, and I didn't know that. It may be it got lost, but my understanding was that of all the records that Commodore Byus had requested from the ship, that was one that had not been provided. That's my understanding. It may be an error.

Q. Yes, sir. You----

A. I might add, if that exists it would be important for the Court to know that and to review it in testimony.

Q. Yes, sir.

A. I was not able to.

Q. Understand, sir. And I think we'll provide it to the Court, at least in the unsigned version. The problem is we've been unable to locate a signed version after the ship sent it to Commodore Byus' Office.

A. Well, it might--I just hope that the Court can use its influence with the staff at the squadron to have them reinvigorate their search.

Q. Yes, sir. Sir, what's a modified piloting party? Does that term ring a bell?

A. Yes, it does. It's a subset of a full piloting party. A full piloting party adds several resources to the normal watchbill to provide more assistance in the navigation of the ship when you're in proximity to shoal water or piloting in and out of port. You modify that but keep some of those resources in place, such as a Fathometer Watch and a Navigation Supervisor overseeing the Quartermaster of the Watch, when you're operating within a certain distance from shoal water.

Q. Yes, sir. Sir, this is the key watchstanders Exhibit that you prepared, or was prepared for you assistance in testimony.

A. Yes.

Q. That does not reflect the manning of a modified piloting party, does it, sir?

A. No, it doesn't.

Q. Were you aware that at the time of the collision a modified piloting party was in use onboard the GREENEVILLE?

A. Yes, I was.

Q. There's no indication there, sir, for a Fathometer Watch. Why is that, sir?

A. Oversight. Just did not consider that, I guess, relevant to the contact picture, but it certainly deserves to be on there for completeness.

Q. Do you know for how long they had been at a modified piloting party prior to the collision? And when I say they, I'm talking about the USS GREENEVILLE, sir.

A. I can only hazard it was their entire underway. That's a guess.

Q. Yes. Do you know or are you aware that the Fathometer Watch, the person standing by the fathometer was a qualified sonar?

A. I would assume that to be the case. That's a prerequisite to stand the watch.

Q. A prerequisite?

A. To be qualified on the fathometer, which is part of the qualification in sonars, not radar.

Q. Where is the fathometer located in the Control Room, sir?

A. It's located in the generally towards the aft port corner of Control. It's just aft--it's basically directly outboard to port of the port plotting table, approximately.

Q. Okay. There was, then, available another qualified Sonar Operator onboard GREENEVILLE, but he was otherwise occupied with the prerequisite job of Fathometer Operator, would that be fair, sir?

A. Yes, sir. And if I can just say. I have not had the opportunity to fully evaluate all the Sonarmen who were on the GREENEVILLE and whether or not there were any available who didn't have an additional watch somewhere else to go in and be the watch on sonar. I don't know the answer to that, and that's something the Court should examine further. But, if the Fathometer Watch was the only other Sonarman onboard who could have been the qualified second operator in Control, Sonar Control, then I would say we didn't have the right people onboard.

Q. Yes, sir. I have some more questions for you about that, sir.

A. That's----

Q. It would be fair to say at least with respect to the Fathometer Watch, this is a--in part inaccurate?

A. Before you put it away we might as well bring out the other inaccurate part which would be the supervisor for the Quartermaster, or Assistant Navigator which would be an additional person to put in the right-hand portion there under navigation operations. So, I would add both the sonar--the Fathometer Operator and the Navigation Supervisor as boxes under navigation operations that are on the right.

Q. And Navigation Supervisor would not be responsible for contact management or detection, correct, sir?

A. Correct.

Q. But a Sonarman, a qualified Sonarman, could be used in that capacity, correct, sir?

A. If he weren't on the fathometer.

Q. And it is a prerequisite that the individual be a qualified Sonarman to operate the fathometer or to stand Fathometer Watch?

A. That's my recollection. I think that would prove to be true, but should be evaluated further through testimony.

Q. Yes, sir.

A. I think the Fathometer Watch is a very important watch and must be stood by a qualified operator, just as the operators in Sonar are also important watches.

Q. Yes, sir.

A. And should be stood by qualified operators.

Q. The Fathometer Watch is a safety of ship watch, would you agree with that, sir?

A. Yes.

Q. His duty is to report the vessel's depth to ensure that the vessel does not run aground.

A. It's more than that, but it does include that. It's more than that in that he should be correlating the charted depth with the depth that they are actually seeing, corrected by own ship's depth from the surface, so that you gain a sense of your expected results still being displayed so that you have a sense of where your chart says you are--you really are. So it's not just, don't hit the bottom, it's also, is your navigation accurate?

Q. Yes, sir. So that's an important--an important job?

A. Absolutely.

Q. And the sonar--the Broadband Sonar Operator, that's also a safety of ship position. Wouldn't you agree?

A. Yes. Actually, I--it's hard to say any of the watchstations on the ship aren't safety of ship if they're not properly stood.

Q. If they're not properly stood?

A. Yes.

Q. Okay. The individual--the unqualified Sonar Operator who was at the second console in Sonar on the 9th of February, what did you ascertain about his qualifications, other than he was not a qualified Sonar Operator--Sonar Technician I should say?

A. Well, he received extensive pipeline training before ever reporting to the ship. So he had had the best training that the submarine Navy can provide to prepare him to become a Sonar Operator in classroom sessions before he arrived at the ship. And he had, I think he reported a total of about 10 days of underway time prior to that with the GREENEVILLE, and so he had some underway time on the ship. And---

Q. Sir, were you aware that he had stood 40 underway watches at the--as a--approximately 40 watches as the--as a Sonarman?

A. That would be logical for about 10 days. I can buy that.

Q. Yes, sir. What does a workload share mean? What's that position?

A. Workload share means that you take some of the--not only burden off the Primary Broadband Operator by getting some common displays and looking at them in different--with emphasis on perhaps different depression elevation angles and the primary operators using to try and get a broader in depth look at the same data. He also can be used to evaluate the classification of some of the contacts that the Broadband Operator has found, to try to gain further tactical information by classification of those contacts. So, he can shift modes while not distracting the Primary Broadband Operator from searching diligently for contacts and providing that to fire control. So he has kind of a variable function there, but I think it's in general true to say he keeps the Primary Broadband Operator from being distracted. And sometimes can look at additional data that the Primary Broadband Operator doesn't have displayed to help him find contacts.

Q. Did you undercover during your investigation any information that suggested that the individual who was manning the Work Load Share Station did not perform his duties in an appropriate manner as required by his--his rate?

A. I was not able to assess his proficiency as a trainee, and that's an area for the Court to consider further. He related to me, however, the main emphasis of what he was trying to do on

that instructional ops was learn how to keep logs. And of course that is an administrative function that first you have to find the contact and then you can start logging his presence, but if you don't find the contact to begin with, then logging it doesn't ever happen 'cause he isn't known to be there. So, the sequence of priorities there would be first find and provide information on the contact, and then do the administration of logging it.

Q. And that would be the Broadband Sonar Operator's duty to find the contacts, wouldn't you agree with that, sir?

A. Yes. And the Workload Share Operator should be helping him do that.

Q. Yes, sir. Any indication that he did not do that?

A. No. In fact, he was being supervised some of the time by a qualified operator, in addition to the Sonar Supervisor.

Q. He was being supervised by the Sonar Supervisor all of the time while he's on watch, correct?

A. That's correct.

Q. And that's a pretty small space, wouldn't you agree?

A. Yes.

Q. In fact, the Sonar Supervisor would be standing behind the two stations could put his hands on both shoulders of the individuals who are manning those two stations, correct?

A. He could if he moves to that location, he could do that easily.

Q. And his job is to supervise their performance of their duties, correct, sir?

A. His job is broader than that, but among other things, it's to supervise their duties.

Q. Well, it wouldn't be appropriate for the Sonar Supervisor to be sitting in the corner having a smoke, correct, sir?

A. No, he should be diligent in his supervision of their performance and the other aspects of his watch.

Q. Any reason to believe he wasn't diligent in the performance of those duties and supervising the two individuals who were on watch, sir?

A. No, but let me just state that on the other hand the ship was in a better posture when it has a qualified operator at both consoles than it is when it has a qualified operator at one console and a trainee at the other who is not being supervised directly.

Q. Yes, sir. Sir, during the course of your investigation did you ascertain whether or not there was a practice on 688 I class ships with the same configuration as the GREENEVILLE to man the workload share station with an under instruction Sonar Operator rather than fully qualified Sonar Operator due to the lack--the differ--the difference in the configuration of those--that class of submarine?

A. Let me see if I understand your question. Are you saying that they are given compensation to not have two qualified operators on those consoles because of their unique configuration?

Q. Sir, my question is, were you aware that there is a practice on 688 I class vessels in this area where, because of the configuration there's been removed--there's been some consoles removed from that Sonar Room to man the workload share station with an under instruction Sonar Technician?

A. Well, if you're telling me that the practice is that he does not have to have a qualified operator supervising him, other than the supervisor, I was not aware of that. If that is the practice it is not in accordance with what I believe the Fleet--the Type Commander wants being done on a submarine.

Q. Sir----

A. First of all, you should realize that other classes of submarines that have difference sonar modifications have many more people in Sonarman the two operators and the supervisor that this class has. And to some extent that makes this class, with this type of sonar, closer to being undermanned in times of high tempo and stress where passive sonar is providing important information, than when you have those other operators in Sonar at the other consoles with mother versatility to move functions between consoles and with more people to provide constant backup. So, I would think it would be incumbent on this class of submarine, with this configuration, to be especially religious about maintaining two qualified stack operators. If you have an under instruction watch, fine, but he needs to be supervised by a qualified operator and even the other variance of this class of submarine.

Q. My question was, though, sir--I understand that that's your feeling about it. My question was, are you aware that there is a practice in this area on 688 I class subs is subject to man the Workload share station with an under instruction Sonar Technician?

A. I think we need to work this question a little more finally before I answer it, because the implication of your question is am I aware we have trainees out there and of course I expect that. I expect that on every class of submarine on these

consoles. But the issue is, is that trainee being also directly supervised by a qualified operator who could move him aside, sit down and be the person thereafter on a continuous basis. And if you're saying it's the local practice that that person does not exist on these ships routinely, then I'd say that's a real shock to me.

Q. Yes, sir----

CC: Counsel, I just want you to know it's 1122 on my watch. We're probably going to try to recess right on time, 1130, you can continue whatever road you want to go down and----

Counsel for CDR Waddle, party (Mr. Gittins): I'll finish this area.

CC: There might be a logical time that you might want to stop, so please go ahead.

Questions by counsel for CDR Waddle, party (Mr. Gittins):

Q. So, the NWP that talks about manning--I'm sorry, the BSY-1 manual that speaks to the issue of sonar manning is written for a configuration other than the A-RCI configuration that is found on the 688 I class submarine, are you aware of that, sir?

A. I accept that. I wasn't necessarily aware of that. I think there are guidelines out there that are specific to this class of submarine with this configuration. It may not be the BSY 1 guidelines. Because this is in an interim stage of COTS, computer off-the-shelf phase of equipment, that's fairly small and subset to this ship, and some others. But--so there is guidance for this actual configuration. It may not be in that manual.

Q. Yes, sir. Do you know what that guidance is?

A. No. I don't recall the name. I did review it in my investigations, and I don't remember the name of it.

Q. Yes, sir.

A. It had one of those standard Navy names, you know, that kind of blends into--fades into, they all sound the same.

Q. Sir, the fact that a UI Workload Share Sonar Technician was on the panel on a full-time basis during this watch did not contribute to this accident, did it?

A. I don't know. Maybe not.

Q. Let me ask you a pointed question, sir. Isn't it a fact that Sierra 13 was identified by the sonar--the BSY-1 Broadband Sonar Operator for at least an hour prior to the collision?

A. Intermittently, yes. Not a continuous contact, but yes, intermittent contact for over an hour before the collision. But, can I--go ahead, I'll let you finish.

Q. What I was going to ask you, sir, is there's nothing more than the Workload Share Operator could have done to manage the contact beyond what the Primary Broadband Sonar Operator did, is there?

A. That I can't answer. And that's what gives me pause for concern and that's why I brought it up in the investigation. Because the amount of time those two and only two operators have to manipulate their displays and gain information is a function of their attention span to move to the different tasks they have. Two people are better than one at that mission. So, the recognition for example of that right 6 bearing rate just after the high-speed evolution when we're now into the phase of starting to focus on target motion analysis before going to periscope depth, there were a couple of minutes there of a right six bearing rate. And I know in my heart that if the Captain knew he had a Right 6 on a surface contact he would have had a bells and whistles going off in his mind saying, I got a guy who's pretty close. And two people are better able to see that than one. Two qualified people are better able to see that than one qualified person and a trainee. I understand there's variations in the degree of qualification or proficiency of an unqualified trainee from 0 to 99 percent qualified. I don't know where on that scale this trainee was, but I can tell you that if there were two qualified operators it would have been just that much more chance that that ship would have called out a right 6 bearing rate on the Sierra 13. The OOD and the Captain know what to do with right 6 bearing rates and they would have been better off.

Q. In point of fact that is entirely speculation because you don't know whether or not--or whether a qualified operator would have identified the right 6 bearing rate, is that accurate?

A. Yes, it is. Let me also say that the force says have two qualified operators for a reason, and it isn't a capricious reason. They're trying to put that ship in a position where it can optimize the use of its sensors and that was not done here. So, I don't know if it led to contribution to the collision or not. But, it is a factor that I have concern about.

Counsel for CDR Waddle, party (Mr. Gittins): This is an appropriate place to break, counselor.

PRES: This Court will be in recess until 1300.

The court recessed at 1127 hours, 7 March 2001.

The court opened at 1300 hours, 7 March 2001.

PRES: This court is now back in session.

CC: Let the record reflect that all members, counsel, and parties are again present in addition to the court reporters. Also, I would like to remind everyone again to please speak clearly and slowly into the microphones so that our simultaneous interpretation will work. RADM Griffiths, I will remind you, sir, that you are still under oath.

Questions by Counsel for CDR Waddle, party (Mr. Gittins):

Q. We were talking about the under instruction Sonar Technician before we broke, sir. When the ship went from 150 feet to periscope depth, the under instruction Sonar Technician was augmented at that point by a qualified Sonar Technician, correct?
A. I don't know.

Q. You did interview Mr. Rhodes did you not, sir?
A. SN Rhodes?

Q. Did you interview the Sonar Chief or the Sonar Supervisor?
A. No.

Q. That would be Petty Officer First Class McGiboney.
A. I did not personally interview them but I believe that they were interviewed and I reviewed those interviews from Commodore Byus.

Q. Did you ascertain that the under instruction Sonar Technician had been augmented by a qualified Sonar Technician by the time the ship was a periscope depth
A. I'm willing to grant that I don't recall. There were intermittent periods where he was supervised by a qualified operator.

Q. Were you able to determine how much of the time he was supervised and not supervised?
A. No, I was not.

Q. Were you able to determine what the reasons were that the supervisory qualified watchstander was not in sonar?
A. Not to a degree where I consider it definitive knowledge. I understand that he went to look for reliefs for others in the

Sonar Shack such as the supervisor that and other reasons that I'm not aware of.

Q. Would those be appropriate things that could be directed by the Sonar Supervisor given the manning?

A. If they were brief, yes, he could say, go quickly, get somebody, and come back.

Q. So it would not be improper for the qualified Sonar Technician to be gone for short periods during the course of this watch if the Sonar Supervisor approved it?

A. It would also depend on the circumstances but I can say there may be occasions when that would not cause a problem.

Q. That would be a judgement matter for the Sonar Supervisor?

A. Yes which he would be subject to accountability for. Can I say, in general, that I think that it is a matter for this court to determine further the degree to which the under instruction watch was supervised and when. And I did not have good definitive knowledge on the periods and the total length of time the fractional amount of time and how they relate to the decisions that were made.

Q. Sir, just a general matter, did you take notes of the interviews that you conducted sir?

A. Yes.

Q. What happened to those notes?

A. I provided them to Commodore Byus and his staff to use them in creating the transcripts and that is the last that I know of them.

Q. Sir, I would like to take a couple minutes and talk about, in summary, submarine target motion analysis techniques.

A. Alright.

Q. You indicated during your direct testimony that you believe that submarine force standard, that a TMA leg should be 3 to 5 minutes. Is that accurate?

A. Yes.

Q. That would be an accurate reflection of your testimony?

A. Yes.

Q. Another name for TMA is Ekelund ranging is that accurate?

A. Yes. That's a subset really. It's not a synonymous term, it's a subset of the other.

Q. Are you aware that NWP 3-21.151.1, revision (a), states that leg lengths greater than 3 minutes do not significantly improve results in conducting TMA?

A. No I was not aware of that.

Q. The NWP that I just described, that would be the NWP that would govern the conduct for target motion analysis would it not, sir?

A. I'll take your word for it. That was a lengthy title.

Q. It would be an NWP that would cover that issue, right sir?

A. Yes.

Q. And I'll just ask you if that looks like the----

A. Yes, that looks like a book that I am familiar with.

Q. It's called NWP 3-21.51.1, Revision A "Submarine Target Motion Analysis (TMA) Techniques."

A. Thank you. I am assuming that the quote you provided is not taken out of context. In other words, there are so many variables that need to be evaluated when you determine the length of a TMA leg that you have to count for those variables before you make the judgement that 3 minutes is all you need.

Q. Well, that's a note that is found in the Ekelund ranging section of the TMA techniques book. What's the relationship between time on a TMA leg and signal-to-noise ratio, if you know, sir?

A. A general ratio would be, the higher the signal-to-noise ratio, in other words, the stronger the signal the less time you would need to be confident you have a good leg.

Q. In fact, the NWP that I just held up a moment ago, that indicates that depending on the signal-to-noise ratio, a TMA leg of approximately one minute is appropriate depending on whether or not it's a positive zero or negative signal-to-noise ratio. Would that be accurate, sir?

A. It may be an accurate quote.

Q. I'm sorry, sir.

A. I said it may be an accurate quote, but I would like a chance to use my judgment and experience to address the issue in a little broader sense.

Q. Well----

A. If you want to give me the opportunity.

Q. I think I will, sir, but let me ask a couple more questions and then if I haven't given you that opportunity in those questions, I'll be glad to let you do that. In a high signal-to-noise ratio target or positive--when you have a positive to signal-to-noise ratio that means it's a louder contact. Would you agree with that?

A. Yes.

Q. The target is easier to hear?

A. Yes.

Q. You are able to obtain a more accurate bearing on a shorter leg. Would you agree with that, sir?

A. Yes.

Q. And the purpose of doing a TMA is to obtain an accurate bearing to the target correct?

A. No.

Q. What is it then, sir?

A. It is to obtain a number of accurate bearings over time which devolves into a bearing rate or rate of change of bearing with time. That's the more important parameter than bearing itself.

Q. Taking a series of bearings that provide you with information?

A. Correct.

Q. In this case, the 2 minute leg and the 3 minute leg provided a solution to Sierra 13 did it not.

A. You can say that it provided a number of solutions because you can see that the ranges that the Fire Control Technician of the Watch was inserting in the machine, the bar code system, was variable over that time frame, but it was providing potential solutions, yes.

Q. In fact, it was a computed solution at the time--well, let me get the slide, sir, [retrieving slide] that is a solution for Sierra 13 is it not, sir? A system solution?

A. [Reviewing slide.] Those are the ranges associated with system solutions, yes.

Q. That would indicate that the Fire Control Technician at time about 1314 computed, hit the enter button, and computed a system solution for target Sierra 13. Is that correct, sir?

A. That is correct.

Q. So that would indicate that at 1314--it's about 1314 according to the SLOGGER data--the information derived from the legs that had been done provided sufficient information to compute a system solution for the target Sierra 13, correct?

A. Yes--well, you can make the same case for all the earlier dots too, in the sense that you're using a system solution as opposed to the system solution that would be truth--not the system solution but the real solution.

Q. Well, this solution 15,000 yards at time 1314 doesn't indicate closing. It's a flip--a flip course. Is that accurate, sir?

A. I believe it was, yes.

Q. That's a flip course but it is an accurate system solution at time 1314 at the appropriate range for the reconstruction of EHIME MARU, correct, sir?

A. It turns out that's close to the actual range, that particular quote choice of solution at that time in the fire control system was close to the actual range, not the actual necessarily course or speed but range.

Q. Right. It has a flip course. Do you know what the speed was on that, sir?

A. My recollection is that the course was also in error as well as being in the wrong direction. And so, therefore the speed compensated for that course error. I think it was a broader course at a slower speed than reality. So, if you will, it was compensating for more speed across the line of sight to the GREENEVILLE with a reduction in the target speed so that it was the right bearing rate. And of course it was the opening GREENEVILLE solution not the closing GREENEVILLE solution.

Q. Yes, sir. This represents an opening solution [pointing to exhibit], which would have been an error at about 1314.

A. Well the range would have been close, but the outer parameters would have been an error.

Q. From the SLOGGER, GREENEVILLE is at 650 feet at the time this system's solution is entered, 13:14:02. Does that sound about right, sir?

A. Conducting the angles, yes--well it was just about to conduct angles at 1316, so 650 feet is very possible.

Q. And the system solution was course 024, speed 11 from SLOGGER. Does that sound about right?

A. I'll take your word for it.

Q. Okay, sir----

A. There was logging solutions logged and it's all tabular data. I don't have it committed to memory but----

Q. This solution is the only solution--the system solution--computed for Sierra 13 in the time between 1314 and just before the collision, correct, sir?

A. I don't know if that's correct or not I would have to review it.

Q. What would you review that would assist you, sir?

A. I would need to review the system fire control solutions for times 1314 and until just before the collision as printed out on SLOGGER data, which would probably be pages and pages of printouts. But the issue I will grant you is that the system solution was a very consistent range of around 15,000 yards for several minutes here. And of course there's only one moment in time; that's right there were it really is the range. Prior to that it's closer than the real range and after that it's farther than the real range. So if they were passing in the night the real truth in the system solution range is passed in the night here but the range in general was consistent for a long period time in the fire control system relatively long period. 1314 until 1340 or so approximately. 1335 maybe, was generally not changing very much and I would say that is because they may have had a period where they did not have good data to update the solution and make it better, such as you hear.

Q. From your investigation you learned that the Commanding Officer walked throughout Sonar at about 1315 correct sir?

A. I know he went into Sonar while they were preparing to do their target motion analysis to go to periscope depth and that would have been at about 1330 or later, a little later than 1330, so with time prior to doing the angles--is that what the question was?

Q. At about 1315, the Captain went from his Stateroom through Sonar into the Control Room. Isn't that true, sir?

A. That's very likely I don't know, but that would have been down in here [pointing laser at exhibit] prior to the high-speed angles and high-speed turns, so fairly early in this hour before the collision, but is possible he went through Sonar.

Q. And the point here is that this flat line indicates not a closing target. Correct, sir?

A. That would be what the fire control system more than the sonar system would be displaying. That would be in the Control Room that would be displaying that.

Q. And in the Control Room would be displayed a system solution that indicated and opening target one that is not closing, correct, sir?

A. Yes.

Q. Sir, between 1314 when the system solution is--the buttons hit, that's what makes this line [pointing laser at exhibit] right, sir?

A. That's correct.

Q. The Fire Control Technician hits a button?

A. That's correct.

Q. Enter, right, sir?

A. Correct.

Q. And when he hits the button, do you know what happened between this time and the next time that he hits the button, which gives the 4,000 yard solution? Do you know what the Fire Technician--Control Technician was doing?

A. Well, let's see. He would be doing his routine assignment from 1314 until just prior to the collision, which would be trying to manage obtaining parameters on all the targets that Sonar was providing him information on and refining those solutions. Plus maintaining the CEP and responding to any other orders from the Officer of the Deck or the Captain.

Q. The exhibits that you brought to this court only indicate what was happening with Sierra 13, correct, sir?

A. Correct.

[Mr. Gittins handed exhibit to court reporter who marked it Exhibit 22. The bailiff mounted Exhibit 22 on easel.]

Q. Exhibit 22 at about time 1332 is when there is that bearing rate that you were talking about, the 6 degree bearing rate, correct, sir?

A. Yes, it appears that is correct.

Q. And that is represented right here on the exhibit [pointing laser at exhibit], second page for the small one, the time right before 1332.

A. Should I be looking at the second page now?

Q. It is the first page.

A. It's the first page, okay.

Q. On 1332, the left side is the time.

A. Okay, I'm with you.

Q. The bearing rate that you discussed and you brought an exhibit to describe that, Exhibit 8, [mounting exhibit on wall] that happens at about 1332, correct, sir?

A. A little bit later than that 1332 a half--1330--yes. Short answer, yes.

Q. This is a much larger view than would be provided to the Fire Control Technician. Would you agree with that, sir?

A. You mean the size of the----

Q. Yes, sir. The data has been taken and just wildly expanded, correct, sir?

A. Right.

Q. More like what you have in front of you on Exhibit 22, correct, sir?

A. Yes, it is closer to this than that.

PRES: Specifically to the one on the wall, Exhibit 8?

Counsel for CDR Waddle, party (Mr. Gittins): Yes, sir. I will try to be a little more direct about what we're talking about.

Q. Right after that--Exhibit 22 and Exhibit 8 in this 6 degree bearing rate--degree per minute bearing rate, begins the baffle turn, correct, sir?

A. To--yes, to course one-two-zero turning to the right to one-two-zero from three-four-zero.

Q. In fact, it is the baffle turn that generates this bearing rate, correct, sir?

A. No, this should be a period when the ship is not changing course between the blue lines. The ship is steady on course. The blue is the actual turning and beyond the blue where it is steady again, so this period right in here [pointing laser at exhibit] is at least on this chart, trying to indicate where there is a turn in progress.

Q. I'm sorry, sir. It was my lack of technical expertise. The turn happens here [pointing laser at exhibit] just before 1332 in the blue on Exhibit 8, correct, sir?

A. Correct.

Q. And once the turn is made, that turn is what generated the bearing rate, correct, sir?

A. Yes, and the orientation of the speed through the water of the two contacts.

Q. And also at about the time that they steadied up on the new course, the GREENEVILLE steadied up on the new course on Exhibit 22, contact Sierra 14 is for the first time identified by Sonar, correct, sir?

A. It appears so on this.

Q. What would happen, based on your knowledge and experience, sir, when Sonar receives this piece of information--when the Fire Control Technician receives this piece of data?

A. When Sierra 14 is first detected?

Q. Yes, sir.

A. The sonar would--the Sonar Operator would tell the supervisor who would--and then assign a tracker to it to give information to Fire Control electronically if its strong enough signal and it appears it was. So that's called Automatic Tracker Follower (ATF), so it's automatically going to start taking note of it thereafter in the system. The supervisor would use the announcing system to tell the Officer of the Deck he has a new contact, its nomenclature, its bearing and if he has a classification already by nature of sound. He would add that in. Sounds like a surface vessel or something like that. Then the Fire Control Technician of the Watch would commence developing a solution as the data develops on his fire control system.

Q. So around the time that this 6 degree per minute rate, should have been identified according to your testimony. The overall tactical picture is complicated by a new contact. Isn't that true, sir?

A. Yes.

Q. And in fact, in your interviews with the Fire Control Technician of the Watch, he indicated that the two targets here are Sierra 14 which was the target of interest before the collision. Isn't that true, sir?

A. I don't know what you mean by the target of interest.

Q. His interview notes indicate, in fact, that it was the target of interest that he was working, isn't that true, sir?

A. He may have physically been working focusing on that particular target to develop a solution at that moment. Is that what you're asking?

Q. Yes, sir----

A. Possibly, I don't recall, but that would be logical.

Counsel for CDR Waddle, party (Mr. Gittins): If you could mark this Exhibit 23 [handing exhibit to court reporter who marked it Exhibit 23 then handed to witness.]

WIT: If your point is that he had just had a new contact while we're in this Right 6 bearing rate [pointing laser at exhibit], and the other contact was distracting him as he was developing a solution, I would say that's all true.

Q. Yes, sir. What I've produced to the court from SLOGGER data is information from the Fire Control Technician's console recorded in SLOGGER for times 13:14:02, 13:34:03, 13:34:48, 13:35:03, 13:37:48, 13:43:48. Have you reviewed this data prior to giving your testimony 2 days ago, sir?

A. No, not the Sierra 14 data.

Q. It appears that just about a minute before the collision, the Fire Control Technician is working the Sierra 14 contact, correct, sir?

A. Well, from what you've just given me here he's working on Sierra 13 at about 6 minutes before the collision, that's what this would say. I don't know if there is other data that fills in the blanks that switches back to Sierra 14, which is possible.

Q. This system update right here at Exhibit 7, [pointing laser at exhibit] that's the system update for 13:37:48, correct, sir?

A. The one on the left there [pointing laser at exhibit], I would say is.

Q. Yes, sir. And according to SLOGGER, the ship was coming to periscope depth according to the right-hand column of the exhibit, pulled from SLOGGER data, correct, sir?

A. Correct.

Q. And at that time, that would have been a time when the Control Room was supposed to be quiet, correct, sir?

A. Yes, I think it's from the data that I've seen here, and of course it's discrete, it's not continuous, so these are examples, and there may be strings that I would determine from further lines of data on either side of these times. But, from what you've shown me here, it says he has 4,000 yards inserted into the system while the ship was coming up to periscope depth and that would be a time where he wouldn't expect anybody to say anything until you hear emergency deep or no close contacts from the Officer of the Deck on the scope. Now, of course, once you're at periscope depth, and you've heard no close contacts, which the OOD did say, at that point, this key information that we've got a new range to weigh in on this contact, Sierra 13, from what I've previously thought, is real pertinent at that point to be brought up.

Q. Exactly, sir. But what Exhibit 23 indicates is solutions where we have a button that is hit on the console, sir, the only time the button is hit between 13:34:02 and 13:43:48. So, you would agree with me, would you not, that you can't really interpolate between--you would only have the operator's testimony regarding what he may have done between obtaining solutions, correct, sir?

A. I am not sure that is correct, here is why. If you look at the data here, it's not continuous, but there are discrete changes in it. And I would think the operator would have needed to have created those changes. So, for example, to go from here down in range to here, I would have thought the operator would have entered something. Maybe I am wrong and that needs to be resolved technically, but I think there are going to be more than just one entry in this period by the operator between 1314 and this range. I think you'll see this requires an operator action. When he rings it back out it requires an operator action, backup requires an operator action, so I see four or five or five times he should have hit the enter button in this region here [pointing laser to exhibit.]

Q. Yes, sir. This will be testimony--the SLOGGER data is going to be testified about by CAPT Kyle?

A. CAPT Kyle, yes.

Q. So, he would be informed as to what this data actually shows, correct, sir?

A. He would be a better source of information on that than I would.

Q. You would agree with me, though, that there was more going on here on Exhibit 7 [pointing laser at exhibit] than just contacts Sierra 13 just prior to this accident, correct, sir?

A. I certainly would and that makes it more complicated for the OOD and the Captain, the Sonar Operators, Fire Control Technician of the Watch. Of course, that's what we pay them to do, is to manage those additional inputs in the time that they have to do so, but it is a timesharing, they have to put time into developing one solution and then another. And, they do have displays that show the current solution on all of them simultaneously, but that's only as good as they've had time to work the individual problems and then update them. And, the Captain knows that, the OOD knows that, they know that that geographic display that shows all the contacts isn't true, but it's the best the Fire Control Technician today will create at that moment. And I think all of that, if I may add, argues for putting more time in, if the FT of the Watch is trying to manage more than one contact and needs more time, then he should be given more time.

Q. Yes, sir, but there is no indication that any information about Sierra 14 was passed to the Commanding Officer during that critical period? Is that true, sir?

A. Do you mean 14 or 13?

Q. 14, sir.

A. I believe I am sure, in fact, Sonar would have reported a new contact 14.

Q. Other than--Sir, I'm speaking of the Fire Control Technician, sir.

A. No, I don't think the Fire Control Technician of the Watch was very communicative in that period--at all in this period, that's one of the issues that I have. But, the Captain and the OOD were able to periodically look at the fire control system if they chose to and they could glance at this without verbal communications. And, I have no way of determining if and when, or how often they looked, and again, testimony from them would be helpful in knowing all that----

Q. Yes, sir. Let me show you----

A. Because they can know all of this without any verbal communications by just going over and observing.

WIT: Mr. Gittins, are you going to refer to this further?

Counsel for CDR Waddle, party: I am not, sir.

WIT: Okay.

Q. Sir, I'm showing you Exhibit 24. Exhibit 24, just for illustration purposes, would be closer to what the Fire Control Technician of the Watch would see on his half of the ray tube rather than Exhibit A, correct, sir?

A. Possibly, it depends on the scale he's adjusted the screen to show. And that's one of the scale issues here is if your contacts are in one sector of the circle around the ship, you don't show the whole scale because you can't get as accurate a bearing rate from these expanded views, so you change the scale to focus in more closely on this. So, what he may have been really looking at on the ship at that moment would have been much more--showing much more resolution than this does on this sheet of paper, but had he not gone to that level of refinement. Then I would call that an issue of experience and skill to make that change in scale, this would be kind of the worse case scale he could have chosen for the contacts he thought he had.

Q. Okay, and--but that would be--it is about the size of a cathode ray tube and that would display all three contacts, correct, sir?

A. Yes, but so would a much more refining scale displaying all three of those contacts and a typical FT would quickly adjust that scale so he could get better information to the OOD.

Q. In particular for Sierra 13, when he was trying to stack the dots, correct, sir?

A. For all three of them, sure, Sierra 13 included.

Q. And what does stack the dots mean, sir?

A. Well, actually that's a different display than this display. This display allows you to put a cursor--let's assume that this was closer to--I'm looking up now at this chart put on the wall--but let's assume that the display he chose gave more of a sense of a slope to the curve than this one on paper does. He would place a cursor to be coincident with that slope and then at the end of the cursor on the screen you would read, bearing rate 6 rate per minute. And he would use that as one input to match to an additional display. We don't have a picture of it, but it would be the console just aft of this one--that was just aft of this one in the Control Room [pointing laser at exhibit]. And it's got a--what we call a mate, MATE, display which is a display where you do try to conduct a process called stacking the dots. And that is what gives you the course, the speed, and the range of the contact in a way that is consistent with the bearing history generated by Sonar.

Q. Yes, sir. When you said, "the console just aft of this one," you were referring to Exhibit 24 that you held up, correct, sir? The exhibit in your hand?

A. Yes, just aft of the one that this one would be on.

Q. Exhibit 24--I'm doing that for the record.

A. Sure. It would be on the console after the Exhibit 24 console.

Q. Yes, sir. Very well. So this process is somewhat complex to begin with for one contact, correct, sir? You have to do a number of different things to compute a solution.

A. It takes skill and it takes time.

Q. And it can be complicated by the existence of another target or another contact if it appears in the middle of that process, correct, sir?

A. Each new contact adds to the burden and the investment and time for individual contacts to develop parameters of value to the OOD and the Captain. Each new contact makes it a little bit

harder and requires a little bit more time. So, each time you get a new contact, you're kind of brought into needing to even spend more time.

Q. Yes, sir. And about the time that the range--the bearing rate increased as you described in your testimony on Exhibit A, that's when a new contact was presented to the Fire Control Technician of the Watch in this case, correct, sir?

A. Correct, and that could have been one of the reasons the ship did not note that right bearing rate then. I'm sure there were reasons and that could well be one of them and you know, that would have been a very important thing to know, you had a right 6 bearing rate contact, Sierra 13. The ship for whatever reason didn't know that. Perhaps the reason you had just brought up is one of the contributing reasons.

Q. Yes, sir. Sir, the Fire Control Technician of the Watch, in this case, did you inform yourself as to his qualifications during the course of the investigation that you conducted?

A. Yes.

Q. He was the Leading Petty Officer for the Fire Control Division onboard GREENEVILLE, correct, sir?

A. That is my understanding, yes.

Q. And he had been placed on GREENEVILLE by name by the squadron. Are you aware of that, sir?

A. No, I wasn't.

Q. He was considered to be a highly qualified Fire Control Technician, correct, sir?

A. By all I know, yes. I think this was his third attack submarine and he was experienced and for all I know also a high quality technician.

Q. Yes, sir. Sir, in your experience, had you ever cleared baffles, gained a new contact just prior to going to periscope depth, and continued on to periscope depth after you've gained that new contact?

A. I don't know, it is possible. The circumstances would need to have made me comfortable at the time if I did that. One example would be, if I was in a high-speed transit--and submarines can go very fast and nothing else really can be keeping up with you behind you. So, in that circumstance, you can make an assumption that as long as you were at depth and you went right by somebody and now they are immediately behind you when you are slowing up to avert them, it is too late because now they are in your baffles. In other words, there are circumstances where even that would cause you a problem, but the

likelihood is no one is directly behind you, so you are a little more concerned about your area at the top and in front of you. And you may decide to balance that risk if you need to get up in a hurry, that depends on the mission.

Q. Yes, sir. I think I may have asked you a question that was confusing. I meant have you ever gone to periscope depth after you cleared baffles and gained a new contact.

A Oh, once I'm at periscope depth, I note a new contact?

Q. After you've cleared your baffles, sir, in proceeding to PD. Have you ever gained a contact and then gone to periscope depth without working that new contact?

A. Again, I don't know--I honestly don't know. There would be a--I would be incurring risk if I decided to do it and it would be a question where do I have a need that outweighs the risks that I incur from doing that. My instincts would be to avoid having to do that unless the need to go to periscope depth was right.

If I were on a deployment mission, I would have one way of looking at that problem, where I may accept more risk because of mission constraints. If I was on a daily operation where peacetime safety was the paramount issue, it would be very unlikely that I would do that. But to be honest, I just can't answer that truthfully by any other question and I don't--but it would depend--it's possible.

Q. Given what you knew about the situation or what you believed you knew about the situation--the contact situation, sir?

A . Yes. I mean you have to recognize that we have a lot of instinctive knowledge built on awareness, and use of our sensors and our computers and an understanding of the environment, so that we have a pretty good feel for what ranges we will hear a passive contact and what ranges we won't, based on the environment and so forth. And that is all part of that decision. I guess the bottom line is if you--if you want me to tell you that are there--are there reasons why you may go to periscope depth with a contact you haven't been able to develop a practical solution on, then the answer is, yes, but you will accept risk when you do that.

Q. Yes, sir. The purpose of TMA is to identify the contact picture before you go to periscope depth, so you can get the ship to periscope depth safely, correct, sir?

A. In general that is the purpose, yes. If you are trying to relate this to the GREENEVILLE the day of the collision, I would add that there are other purposes. I think the CO was trying to build a set knowledge in the aggregate, which he would rely on to

determine if it was safe to go to periscope depth--I mean safe to do the emergency blow. The periscope depth and preparations to go to periscope depth kind of commenced starting to build that body of knowledge. I mean he didn't discount things he had learned earlier, but that was when he was really focusing on building that body of knowledge. And that whole body of knowledge is what he'd base his decision on. In other words, not just the visual search at periscope depth, but also the sonar data and information and solutions that he obtained prior to that. So, in this case, I think he was trying to build a comfort level that he really did have an area of clear contacts. And the TMA was also for that purpose as well as just getting to PD because he knew was going to go down and then back up and that's part of it.

Q. Yes, sir. For example sir, if the Commanding Officer knew that this target on Exhibit 7, Sierra 13, was opening, that's an indication of an opening target, correct, sir?

A. Over time it certainly is, yes--opening range.

Q. That would be a piece of information that would factor into the calculus that you just described, correct, sir?

A. Yes. I'm sure CDR Waddle considered he did not have a close contact based on what he knew--and this is part of what he knew, except for the part that he didn't get reported to him and obviously, he didn't get a chance to observe on the fire control system.

Q. Yes, sir, and the ship was--the ship did get safely to periscope depth, correct, sir?

A. Yes.

Q. And the TMA maneuvers, whether they were 3 minutes long each or not, did disclose the fire control solution for Sierra 13, as well as Sierra 14, correct, sir?

A. I think from the data you showed me, he had a range solution on both contacts prior to going to periscope depth and that was shown----

PRES: Sorry, go ahead and finish. I was going to ask the counselor if I could add on to his question.

WIT: So in other words, the Captain thought he had ranges on those contacts that were safely distant so he could proceed to periscope depth.

EXAMINATION BY THE COURT

Question by the President:

Q. If he has fire control data, would the CO then use that as a cueing for his periscope search? Was there any evidence of a cueing for a periscope search based on fire control data?

A. I believe, and from interviews, that the Captain used mentally, in his own mind, information he gleaned before he got on the periscope to help cue his own search. Now, the testimony that I provided earlier that could be considered as criticism of that technique, if you will, was that he did it all alone and without help. Without apparent help from people who could have helped coach him more directly under the exact bearings while he's looking through the scope. And that would require some verbal communications.

PRES: I was trying to understand. Mr. Gittins, go on with that one, sir. Thank you.

WIT: Sir, but the Captain did--after his low-powered safety sweep--my understanding is that he did then go high-power and do a more a deliberate search in a sector inclusive of what he thought the sonar contacts he had were.

CROSS-EXAMINATION

Questions by Counsel for CDR Waddle, party (Mr. Gittins):

Q. Would you agree, sir, while you disagree that the TMA was done properly, the effect of the maneuvers performed by CDR Waddle was that he identified the contacts--or was able to identify the contacts and obtain solutions on those contacts, except for the fact that Sierra 13 was not identified to him at time 1330+ as indicated on diagram--Exhibit 7.

A. I think I know where you are going here. He thought he had safe solutions on the contacts he knew about before he went to periscope depth. It turns out he didn't have a very good solution on this contact, but he didn't know that at the time and I agree with that.

Q. Would you also agree, sir, that--that you have to place yourself in the position of the Captain at the time of the accident or before the accident to judge his actions, based on what he knew and why he knew it?

A. Yes, and that is difficult for me to do. I tried to do the best I could, but I had challenges in doing that.

Q. Yes, sir. So, after the ship gets to periscope depth, sir, the periscope is used by the OOD first, correct, sir?

A. Correct.

Q. And he did a by-the-book initial search--an initial visual search with the periscope. Would that be accurate, sir?

A. Yes, that's accurate.

Q. And the purpose of the initial visual search is safety of the ship, correct?

A. Correct.

Q. For the periscope initial visual search, there is no specific section of the NWP that explains the procedure for the initial visual search in other than a tactical environment, correct, sir?

A. Yes.

Q. Would it also be fair to say that in the submarine community, from very early on, submariners are trained to get the scope up, to get the scope down, because that is a--that's how submarines are detected when they put the scope above the water?

A. That is an instinct to not have overly long periscope exposures whenever you're in a tactical situation. That certainly can carry over into safety of ship scenarios or daily operations when you're not in a tactical scenario. You can have that carry over because of the strength in your training and your instincts.

Q. Yes, sir, and when you're in a tactical situation, there is no difference in the safety of ship considerations than in a peacetime situation, would you agree, sir? The idea of that initial visual search is to make sure the submarine is not run over by a surface contact?

A. No disagreement, that is correct.

Q. Yes, sir. The initial visual search is performed to detect close contacts or floating objects that present an immediate threat to ships safety, correct, sir?

A. Correct.

Q. And the way that is done is at low-power three times around, 360 degrees by the person on the scope, correct, sir?

A. Correct.

Q. And if at any time during that initial low-power search, the person on the scope, in this case was the OOD, were to see a close aboard contact, that would be when he would order emergency deep, correct, sir?

A. That is correct.

Q. Any person who is on the scope, in fact, would--who sees a close aboard contact would be required to order emergency deep?
A. That is correct.

Q. The three times around--the three revolutions of the periscope should be rapid enough to be thorough and--but, not so rapid so that collision threats are not detected. Is that fair?
A. That is the idea and I think that says about 8 seconds per revolution.

Q. Yes, sir. And in this case, the investigation that you conducted, determined that after LTJG Coen performed his initial visual search, he reported no close contacts, correct, sir?
A. That is correct.

Q. That would indicate that in his initial visual search at low-power, he observed no immediate threat to the USS GREENEVILLE, correct?
A. Correct.

Q. And after he completed his visual search, CDR Waddle got on the periscope. Is that what you understand, sir?
A. That's what I understand.

Q. And at that point CDR Waddle performed a low-powered 360 degree search using the periscope?
A. Yes, that's my understanding.

Q. And then he raised the ship after he performed that visual search, correct?
A. Correct.

Q. Raising the vessel to get a better look is an appropriate action, correct, sir?
A. Absolutely.

Q. And the purpose of raising the ship a couple of feet is to get a better view to the horizon. Is that fair?
A. Yes.

Q. And that's a judgment call is it not, sir?
A. Yes.

Q. The Captain is looking through the periscope, raises the vessel enough that in his judgment he can see what he needs to see. Is that fair?
A. Yes.

Q. That is one of these places--one of the places where a Captain is expected to use the judgment he's developed over a 19 or 20 year career, correct, sir?

A. However long his career is at that point, he's the man making the decision.

Q. Yes, sir. Would you agree with the statement, sir, that the periscope operator should always be aware of his orientation to the bow of the ship and that he should be able to train the periscope within 10 degrees of any desired bearing without assistance?

A. Yes.

Q. That's straight out of the NWP isn't it, sir?

A. And, I'm sure CDR Waddle could do that.

Q. Yes, sir, so when you indicated that CDR Waddle didn't get any assistance, he shouldn't have required assistance to perform the bearing--the bearing search of interest, correct, sir?

A. No, not correct.

Q. Why isn't it correct, sir.

A. You have the difference between a course solution and a fine solution here. In high-power, at most you have a 6 degree horizontal field of vision, 3 degrees either side of the central cross-area. If he was in even higher power than that, it would be much less and so you--you have a shrinking view that you're looking through of the ocean--of the horizon. And so 5 degrees, let alone 10 degrees, can be the margin of error between seeing and not seeing EHIME MARU, for example. And if you have not had an updated bearing for a few minutes, the bearing can be off a few more degrees from what you remember it being. So, depending on when your last reported bearing to Sierra 13 is--before you look out that scope in a dynamic period, where asking for a sonar bearing is not probably the first thing on his mind--and I didn't get interviews that would indicate that was being asked, then you're talking about--you can miss the right horizontal sector to look at.

Now if you swing left and right, but just beyond the left or just beyond the right limits of your swing in the forward sector is where the contact is, you'd miss him all together whether you would have seen him or not. So, it really helps to get on to the nearest degree--the current sonar bearing of contacts when you're on the scope. And that is the standard I think you'll see routinely used in the Fleet when you are trying the searches.

Q. Well, would you agree with me, sir, that if CDR Waddle began his sector search at or about the bearing of the reported contact, and conducted a high-power visual search using the doubler from 90 degrees to either side of back and forward bearings, that probably would have been sufficient to--if it was visible to identify the EHIME MARU?

A. Well, here's the thing. I guess the general answer to the question is--would be--includes broad enough sector then the ship would have been somewhere in there and that's true, but here's the thing. In the interview, I was able to review the notes from CDR Waddle. He stated his search went from, I believe it was 320 degrees true to 015 degrees true approximately that--that sector inclusively of about 55 degrees. Now I may have the numbers a little off there. When I asked the same question of the FT of the Watch in my interview I was able to conduct with him, he brought the right tangent of that deliberate search more to the right than 015. 015 might be the wrong number, but it is in CDR Waddle's interview statement. And so, it turns out the actual bearing of the EHIME MARU, at that time, was I believe--was somewhere between 015 and 120. So there was just the potential there for the Captain to have been a degree or 2 off in high-power for having in his horizontal field of view the contact. Just the potential, and I wonder if that may be one of the issues here. And that's why I raised this coordinated search as an issue to look at, because it could have been just enough to miss it.

Q. Okay. In fact, the Fire Control Technician of the Watch, who you did interview, indicated that he observed CDR Waddle search with the periscope at the approximate bearing of the contact of interest when he performed the sector search, correct, sir?

A. Well, I think you're in that 10 degree tolerance range now, but I think in applying those standards, yes. But I think--something important that I want to add. In CDR Waddle's interview, he also reported then swinging right to right ahead and I think he remained in high-power. So there was a period when he was swinging the scope where, even if he hadn't missed in the sectors looking at EHIME MARU, maybe if it was just to the right of his sector scan, he would have passed over it when he swung the scope around clockwise to ahead. Now remember the ship's course is 120 at this point, so if he is looking at 015 and swings right to 120, he would include all those bearings between 015 and 120 and so one way or the other the scope would have passed through EHIME MARU either stationary or moving. So I think there was an opportunity there to see EHIME MARU one way or the other, but I think it would have been a better opportunity if he was coached to the nearest degree in the current sonar bearing.

Q. Yes, sir. The interview that you conducted with the Fire Control Technician of the Watch indicates that FT1 reported the CO took the scope, did his search, and then started looking down the bearing of contacts Sierra 2, Sierra 12, Sierra 13, and Sierra 14. FT1 reports he was verifying the bearing of the scope on OSDS on each contact. Could you explain what it means to verify the bearing of the scope on OSDS on each contact?

A. Yes. There are flat screens, including a couple in Control, and they can be aligned to show data on the bearing the periscope is looking at any moment in time. He's implying this is what they were doing at this point. So wherever the scope is looking, the FT can visually see the bearing. As it's changing he reads that bearing so the FT knows the bearings to these contacts and my assessment of what he meant there is, he sees that the CO is inclusive of those bearings and where he's looking.

Q. So the Fire Control Technician of the Watch would be the person who knows what bearings should be searched?

A. Right.

Q. And from what he told you on the 10th of February, he did confirm that the Commanding Officer verified--searched the reported bearings of those contacts?

A. Yes, he did.

Q. And he verified it by using the OSDS for each contact?

A. Yes. Now again, to get to the level of granularity here I think the issue warrants--the Skipper doesn't have the assistance of knowing this. He doesn't know the FT is verifying this, because he is not hearing the FT tell him this. The Skipper is a smart guy and he's figured out before he got on the scope, the general bearings he's going to want to look at and he knows where he is within 10 degrees and so forth. So he tries to include them in his search. Now this is a moving search, more difficult to see something than a stationery search, but nevertheless possible. And so I am just trying to say--and the very optimum method that the Skipper could have used is to say, put me on the current bearing to target "X." The bearing is three-one-nine a half. Your on it right now, high-power level. That is the very optimum he can do. Anything less than that you degrade a little bit, climb on down in what your able to see.

Now the Skipper chose a method that was slightly less rigorous than that. I think he did include the bearing sectors that included these contacts, whether he was moving at the time because he wasn't coached to stop stationary and look and so forth, I don't know.

Q. By the time you get to be a Commanding Officer of a submarine, you've learned pretty much, would you agree sir, that where your contacts are in terms of from your bow? Let me restate this. Isn't it--wouldn't be a standard procedure for a Commanding Officer for one of his Officers of the Watch to say point me to your contacts?

A. Yes.

Q. And the purpose of that drill is to ensure that the Officer of the Deck has the situational awareness of the contact picture, correct?

A. Correct.

Q. You presume that a Commanding Officer would be able to perform that same exercise in his own head without having to tell someone else----

A. And it would be with in about 10 degrees.

Q. Yes, sir. And we know from the Fire Control Technician of the Watch that he verified CDR Waddle's look at the--looked down the bearing contacts Sierra 2, Sierra 12, Sierra 13, and Sierra 14, correct, sir?

A. Yes, that's how he testified--or told us in the interview.

Q. Yes, sir, that is what is required to perform a sector search, correct, sir? In high-power?

A. Well the CO has some latitude in how he does it because we are interpreting the technical rules for a safety of ship, local operational area. Ultimately you have looked hard at the bearings that you suspect there may be contacts based on sonar. In all else to, but especially where the sonar says there are contacts because you could have contacts out there that sonar doesn't see. Yes, the CO is going to want to have the assurance that he's been very thorough in the way he's visually looked.

Q. Again, the exact manner in which a Commanding Officer performs the visual search for the periscope is a matter of judgment based on the circumstances he finds himself in and his training and experience over an 18 to 20 year career, correct, sir.

A. Yes, the Captain is operating based on his own good judgment.

Q. With respect to CDR Waddle's actions, in this case, he performed a sector search and you obtained--indicate he performed a sector search on high-power and including using the doubler, correct, sir?

A. Except I'm not sure if he used the doubler or not. I don't know and an interview with him could help refine that further because he is probably the only one at this point who could

answer the doubler issue because that has not been determined at this point.

Q. And through your investigation you also learned that he raised the level of the vessel, correct, sir?

A. Correct.

Q. And you testified earlier that that would be a means that could or should be used to get a better look, correct?

A. Correct.

Q. How high you raise the vessel is a matter of judgment by the Commanding Officer based on his training experience and the circumstances he finds himself in, including meteorological conditions, correct, sir?

A. Absolutely.

Q. The Commanding Officer in this case also turned off the PERIVIS, are you aware of that, sir?

A. No, I wasn't, but it's his option.

Q. Well, let me ask you, sir, that would add to the picture the Commanding Officer would get, correct,, sir?

A. I would say that would probably be a smart move. He's already had the OOD and he make some low-powered revolutions and no close contacts, so he is trying to optimize his ability to see through that scope and turning off the PERIVIS at that point helps him do that because it gives him more light to work with. I wasn't aware he did that. I think that if he did do that, that makes sense.

Q. And that's an indication that he had--being diligent in his search, correct, sir?

A. It is an indicator that he's trying to be very diligent, sir.

Q. And the Commanding Officer in this case also called for an ESM search, correct, sir?

A. Well of course, it is going to happen by training whether he calls for it or not. And he heard reports from ESM that it was happening. And I don't have data that would indicate that he directly queried ESM to something in particular. He may have and I don't have data on it, but he was definitely hearing the standard reports he would expect to hear from his ESM that were helpful to understand the contacts.

Q. I'll come back to that in just a second, sir. I just noticed I missed something. For the periscope installed on the--the periscope that was used by CDR Waddle onboard the USS GREENEVILLE on 9 February 2001 was a Type 18 periscope, is that accurate?

A. Yes.

Q. Ships with Type 18 periscopes, the searches should be made in the 12X or 24X on sonar bearings of the contacts of interest, is that accurate, sir?

A. Are you citing a reference, a directive----

Q. Yes, sir. I'm citing NWP--the NWP, paragraph 2.2.3.2.

A. Sounds correct then.

Q. Then if CDR Waddle used the doubler, that would indicate that he performed a 12X and 24X magnification search, correct?

A. Well again, there are three basic classifications in the doubler. Double all those three, so there's six permutations and all I know is low-power and high-power were used at my level of understanding right now.

Q. If you use the doubler at high-power, sir, what magnification would you get?

A. Unfortunately our nomenclature is out--is a little ambiguous for the Type 18 scope with the high-power being used. Does it mean 6 or does it mean 12 magnification? It's kind of the NWP still needs to be a little more definitive here, so I can't answer the question. But 6 power doubled is 12 or 12 power undoubled is 12 either one is a very good magnification for the purposes of what CDR Waddle wanted to do that day. What he actually used to get high-power, I don't know.

Q. We were talking about the ESM that was conducted when the periscope was raised at periscope depth. What happened on the USS GREENEVILLE is called a defensive search. Isn't that true, sir?

A. Yes.

Q. And the purpose of a defensive search is to identify immediate threat contact to the submarine to periscope depth, correct, sir?

A. Yes it is.

Q. Would you agree that if ESM defensive search should take about the same amount of time on the initial visual search on a 688 class submarine, sir?

A. I think I am unsure. I don't know.

Q. Sure. Would you be surprised to learn, sir, that the NWP that governs the ESM indicates that in ESM defensive search should take about the same amount of time initial visual search done with a periscope?

A. And the indication there is less than 30 seconds?

Q. In the same amount of time as the initial visual search.

A. Okay, can you read for me the time it takes to do an initial visual search again?

Counsel for CDR Waddle, party (Mr. Gittins): I'll come back to that. I promise I'll come back to that.

Q. The ESM Operators are in a Radio Shack right behind the Control Room, correct, sir?

A. Yes.

Q. And in the case of the USS GREENEVILLE on 9 February 2001, there was a fully qualified ESM Operator and under instruction ESM individual in that radio shack, correct?

A. Yes.

Q. And at the time you interviewed--they were interviewed as a result of the investigation, correct, sir?

A. By Commodore Byus, yes.

Q. And the band of interest--the marine band, among others would be Band 9, correct, sir?

A. Yes, that is the typical radar band from all the platforms.

Q. And in the ESM--I'm going to call it Radio Shack, I don't know if that is the proper term--the ESM Room--the ESM Room and the Radio Room there is what is called a WLR-8, which is a visual--it's a system that has a visual display, correct, sir?

A. That is correct.

Q. And contacts on Band 9 would be displayed on that video display. Is that accurate?

A. Yes.

Q. In the initial defensive search, the ESM Operator is searching for signal strength 4 or 5 contacts, correct?

A. Correct.

Q. Those signal strength contact of 4 or 5 indicate a close aboard contact, which would indicate that you have a contact close aboard, correct?

A. The potential for a collision from a contact close aboard is indicated by that.

Q. Yes, sir. And isn't it true, sir, that according to the NWP or the ESM system that aural clues, aural meaning through the ears, are the primary means of determining signal strength 4 and 5?

A. Primary means?

Q. The primary means, sir.

A. When time is of the essence I think that is the primary means. I think it's not the most optimum means to do so. I think you could do a better job of doing that with our installed system. But because primary implies--and perhaps also time is of the essence, your first coming to PD and if you go emergency deep or not the seconds count, certainly it is the primary means then. I think it is more definitive to use the displays to make a call on signal strength in general, when time is not of the essence.

Q. In fact in this case, the ESM operators, both the under instruction and the fully qualified ESM operator both looked at the display and listened to the oral indication. In fact they passed the headphones from one to the other and determined that there was no signal strength 4 or 5 detected?

A. Yes, that is what they interviewed and made those statements.

Counsel for CDR Waddle, party (Mr. Gittins): Yes, sir. I am going to come back to that initial search for close contacts that you asked me about. According to NWP 3:55.42, the initial search for close contacts is at least three rapid, 360 degree sweeps, approximately 8 seconds per sweep, so 24 seconds.

WIT: Thank you.

Q. So, according to the NWP governing the ESM sweep installed on the GREENEVILLE, the ESM defensive search should have been able to be concluded within the initial 24 seconds or thereabouts--periscope search conducted by the OOD. You don't agree with that, sir?

A. I'm going to agree with that. If I can just add, more time though helps to refine the answer to that. In fact, I really don't know if the radar on the EHIME MARU at 2,000 yards would have been a signal strength 4 or 5. That is one of those imponderables at this point. If it wasn't though, I have technical information--technical advice that says it was about to and time helps with about to be situations mature. So--the only point in my investigation I was trying to make about that is time helps and they didn't have a lot of time. And this may have been one more aid that could have helped the CO.

Q. But in fact, your investigation is closed today and ESM search was performed?

A. Yes.

Q. And in fact, at the time, the Captain directed the vessel to submerge, to emergency deep, ESM had reported or were about to report the results of their ESM search to the Captain, correct?

A. I think about to report is the correct answer from the interviews.

Q. And ultimately they did report, correct, sir.

A. Yes, and that report was no collision threat or something equivalent to that or else the Skipper would have been.

Q. Sir the--you talked about tripwires in certain points during your testimony. A sonar tripwire would be one where you had a close contact or you see--you get indications in all the depression elevation angle of a close aboard contact, correct, sir?

A. Having those indications would be indications that you have a close contact. A tripwire is whatever the CO determines he wants and that is up to him.

Q. Yes, sir, but for a trained Sonar Operator, seeing a rising signal-to-noise ratio in all depression elevation angles would be an indicator of a ship on--that's close aboard, correct?

A. Closing in is potentially a threat of collision, yes.

Q. Yes, sir. As a result of your interviews of Sonar Operators, including the Sonar Supervisor, did they report to you or to anyone performing interviews on your behalf, that they observed rising signals-to-noise ratios in all depression elevation angles or majority of depression elevation angles?

A. No, I had no indication that Sonar made any reports to the Conn that would indicate a close aboard contact, including not making--including that one.

Q. Well, let me ask first of all, sir, you just indicated about a report, the proper report if that was observed would be something to the effect, "Conn, Sonar I have a contact Sierra 13 showing in all D/Es, depression elevations." Is that accurate, sir?

A. Yes.

Q. That wasn't reported according your interviews and the interviews conducted by people working for you.

A. Correct, that was not.

Q. And in fact, the interviews disclosed that there was no observation of that condition to report. Isn't that true, sir?

A. To the best of my knowledge that is true.

Q. So, it would be fair to say that CDR Waddle did not have a report of sonar depression elevation angles that would indicate a close aboard contact?

A. That's correct, he did have that.

Q. He did not see it through his periscope search? Did not see the EHIME MARU to the best of your knowledge when he performed his visual search?

A. I'm sure he did not see the EHIME MARU.

Q. The ESM did not disclose a close aboard contact with a signal 4 or 5. Is that accurate, sir?

A. That's accurate.

Q. And the Fire Control Technician of the Watch, to your knowledge, did not report to the Captain of the ship that he had a contact at 4,000 yards and closing?

A. That's correct, he made no report.

Q. No report whatsoever?

A. Whatsoever.

Counsel for the CDR Waddle party: Sir, this might be an appropriate time to take a brief recess. I may be done with my questioning, but if I may just have a few minutes?

PRES: Let's go ahead and do that then. This court is in recess for about 15 minutes.

The court recessed at 1423 hours, 7 March 2001.

The court opened at 1445 hours, 7 March 2001.

PRES: This court is now back in session.

CC: Let the record reflect that at all members, parties, and counsel, and court reporters are again present. RADM Griffiths, I then remind you that you are still under oath, sir.

WIT: I understand.

Questions by counsel for CDR Waddle, party (Mr. Gittins):

Q. Sir, I just have a couple more questions. In the diagram, Exhibit 9, up on the wall, this is the expanded depth while at PD graph, the indications are the ship was raised to, and it appears to be about 60 feet--61 feet somewhere in there, at about time 1339.

A. By the digital depth detector, yes.

Q. Yes, sir, this is digital depth detector? [Pointing laser at exhibit.]

A. Yes.

Q. What was the error that you believe--that you learned during the investigation, the error between that digital depth gauge and the mechanical depth gauge?

A. Approximately 3 to 4 feet.

Q. 3 to 4, sir?

A. 3 to 4, and that's my estimate. I think my interview is 3.

Q. Yes, sir. Are you aware that the crew had performed a number of empirical evaluations of that difference and had concluded that the difference was 6 feet?

A. No.

Q. If the difference is 6 feet and that is demonstrated in this hearing, sir, the ship would have been raised to 55 or 56 feet. Would you agree with that, Sir?

A. Yes.

Q. Would that be a high look?

A. It would be higher than 58 feet. You know it was--the range of options are broached to even deeper than the ship shows.

Q. Yes, sir. So, your working assumption was that the difference between the digital depth gauge and the mechanical shallow water depth gauge was 3 to 4 feet?

A. Yes.

Q. And it would make a difference, a 2 foot difference, would make a difference, wouldn't it, sir, in the distance that would be visible through the periscope?

A. Any additional degree or shallow makes a difference, any amount. May I add though that I think the ship was controlling on a mechanical depth indication, which they would call a shallow depth gauge, and the difference between reality and what the shallow depth gauge would read would probably be much closer than 3 feet or 6 feet, or anything in between. The reason for that

is, each time the ship would lower the periscope they would note the depth the periscope goes under and compare that to the shallow depth gauge indication, so they would have a good feel, routinely, when operating the ship at sea. What that difference was, on a more of reliable basis than the digital, which tends to be more variable. And, I'm sure that the ship was using the shallow depth gauge as their standard when they were operating at shallow depth select periscope depth, because it's preferable, it's more reliable, it's what we're use to.

The reason the system recorded digital is, that's the electrical signal, the only option the system has to record, so I didn't use the absolute values of these because I couldn't tell what the error was, rather I used the slopes to help define the boundaries of time at periscope depth, and to show that clearly they were, at one point, shallower than at the other point, which coincided with how the CO described the sequence, and others, in interviews. But, I would think that the 58 and 60 feet interviews developed are probably close to accurate, and so I didn't rely on the absolute value of these depths.

Q. I understand, sir. But the difference--the observed difference derived by the crew empirically by experimentation over time would make a difference if it was 6 feet in the numbers that you have here, correct, sir?

A. If that's--if the real ground truth is that 6 feet is the delta of, then we have a record of what the truth was by applying that correction here. Are you saying this is after the fact or----

Q. No, before the----

A. Before the fact?

Q. Before the accident, sir.

A. Before the----

Q. Yes, sir.

A. Well that's something I didn't know.

Q. Yes, sir, and we'll bring testimony to the members for that. Sir, raising the vessel was a reasonable thing to do under the circumstances. Would you agree, sir?

A. Yes.

Q. To get a better look.

A. Yes.

Q. And performing a deliberate search on the bearings was a reasonable thing to do by CDR Waddle?

A. Yes.

Q. And if you use the doubler that would be a reasonable thing to do to improve his opportunity to observe the EHIME MARU, correct, sir?

A. Particularly useful to use the doubler when you are not moving the scope in rotation.

Q. Yes, sir.

A. If it's moving in rotation, the doubler could actually impede your ability to see something.

Q. Yes, sir. But that's a technique that is known in the submarine community, correct?

A. Yes.

Q. So you wouldn't expect an experienced Captain with--who had been in command for 2 years, would be moving the scope using the doubler, correct, sir?

A. No. I would expect CDR Waddle to be very proficient in periscope use.

Q. And that wouldn't be a demonstration proficient use to be using the doubler while sweeping the scope?

A. Depending on the sweep rate. I mean if you're very slow, even then, you could use the doubler proficiently.

Q. Sir----

A. But, if there's any rotation rate, then it would be very hard to see anything.

Q. Yes, sir. And to turn off the PERIVIS, that would be a reasonable thing to do under the circumstances?

A. Absolutely.

Q. And to do an ESM search was a reasonable thing to do under the circumstances?

A. Yes.

Counsel for CDR Waddle, party (Mr. Gittins): That's all I have, sir.

PRES: Thank you. I would like to raise one point for Counsel for CDR Waddle. The issue was raised at the beginning, I think, today about the watchbill, the sense that you felt the signed watchbill had been passed to Commodore Byus for record keeping, and we need to make sure that we can go back and do the right

type of search to find that signed watchbill. I'm very interested. What confuses me a little bit is, it would seem to me there would be several watchbills, or copies of watchbills, signed watchbills, still on GREENEVILLE. And, so I'm going to ask the counsel of the court to go back to GREENEVILLE and ask them to go find another watchbill. It seems to me those ought to be there. Whether the original, I assume it was the original that passed to Commodore Byus. So, Counsel of the Court, let's make representation to the USS GREENEVILLE on that and try and find--I assume someone like the Chief of the Boat, or the engineering watch, knowing the way the Navy works, I believe on something like those typically get posted and they are typically kept for days or whatever, I'm not sure how long, but I would--I would kind of hope that we could find another signed copy.

Counsel for CDR Waddle, party (Mr. Gittins): Yes, sir. We provided--we asked for the ship to send us a copy of what they had last night, and I believe a copy got sent to counsel for the investigation, but it's an unsigned version, sir.

PRES: Well, that's what disturbs me.

Counsel for CDR Waddle, party (Mr. Gittins): Yes, sir, and we are running down now the issue of who had the watchbill, and who took it from there. Basically, trying to track who had that watchbill in their hand, at what point.

PRES: That's what I want to ask Counsel of the Court to do because I'll assume he'll look at the distribution. Typically, that would occur on that ship in terms of the number copies of the original signed watchbill.

CC: Yes, sir, I'll contact GREENEVILLE after the recess.

PRES: Alright. Counsel for LCDR Pfeifer?

Counsel for LCDR Pfeifer, party (LCDR Stone): Yes, sir.

Questions by counsel for LCDR Pfeifer, party (LCDR Stone):

Q. Good afternoon, sir. Initially in your report you mentioned it was difficult to gather data, such as the CEP, the sonar tape, the mylar overlay, this wasn't hit earlier, but there is very good reasons why the mylar overlay was erased correct, that's not really an issue here?

A. I don't know exactly why it was erased. I don't think there was a malice or forethought on the reason it was erased. I think it was erased, after the point that it was a valuable record to retain and that was inadvertent.

Q. No evidence anywhere to suggest that anything was destroyed intentionally or the ship or any member of crew did anything to cover anything up.

A. Certainly not.

Q. You are aware of JAGMAN section 1208, which provides us the list of required information to be turned after a collision and that was part of the information that you used, correct?

A. Yes, that was the basis for what was requested.

Q. Did you realize that initially the watchbill was not even one of them, not even listed?

A. No, I didn't realize it's not listed. But I know that the watchbill was requested.

Q. But, are you aware that it was requested much later than the very initial time it was?

A. No, I was not aware that was much later that it was requested.

Q. Now, isn't it true, sir, that when you heard of the collision that you began based on your knowledge as a submarine officer, to speculate on how this tragedy may have happened?

A. In a general sense, I probably did.

Q. It's perfectly normal would you believe that?

A. Yes.

Q. Now, if you did some brain storming and speculating when you got your mission is it conceivable for others to speculate and brain storm about causation when they were tasked as well.

A. I think once tasked they would--if they--are you implying for example the court.

Q. In any submariner that sees a tragedy, that's asked with providing an explanation, they might be able to come up with some ideas?

A. I think any submariner once he heard of this event started to think about it--okay, and speculation I guess.

Q. Now, you've never actually interrogated LCDR Pfeifer did you, sir?

A. No.

Q. You did try twice though, isn't that true?

A. Yes.

Q. The first was about 2 days after the initial interrogation by LCDR Harrison and CAPT Byus?

A. Yes.

Q. And then, the second time was the day later isn't that also true?

A. Yes.

Q. Now, you previously stated to me that LCDR Pfeifer, in your opinion, was under what you believed impossible pressure. Is that also true?

A. Yes.

Q. I mean he was--do you agree with me that he was the XO of a ship in trauma?

A. Yes.

Q. He had now had a new Commanding Officer?

A. Yes.

Q. He was the coordinating ship's role in the NTSB Investigation?

A. Correct.

Q. He also had to help handle the ship's role in the Preliminary Inquiry?

A. Correct.

Q. He was being named to a party?

A. Correct.

Q. He had his rights read?

A. Correct.

Q. Probably most importantly, he witnessed the sinking of EHIME MARU?

A. Certainly, most importantly.

Q. Was in the--basically an integral part of the rescue effort?

A. True.

Q. And when you talked with him, it was very obvious that he hadn't slept well?

A. He looked fatigued to me.

Q. Now the second attempt to the interrogation, you also stated that you were concerned about the stress he was under?

A. Yes.

Q. Okay, isn't it also true that you described his appearance to me as appearing shell-shocked?

A. Yes.

Q. Now, you stated that you received some of your information from NTSB interviews----

A. Now, can I just go a little further on the reason I was telling you all those things--sure. Was because I worried about him as a person. This really had nothing to do with wearing a uniform. It had to do with the fact that if I had been him, I don't know how I would have been able to accomplish all those responsibilities that he was simultaneously tasked to accomplish and endure and be effective. So, at least for an interim, I suggested to the Force Commander that he consider temporarily relieving the XO of some of his duties so that he could more humanly endure those that he retained.

Q. Sir, I don't think anyone is questioning your belief in that, okay. Now, you did state that you had received some information from NTSB interviews from CAPT Kyle, correct?

A. Correct.

Q. Now, CAPT Kyle was the Navy representative to the NTSB?

A. Yes.

Q. So, with regards to this information that came from NTSB, you don't have any first hand knowledge, you didn't do any----

A. I don't have any first hand knowledge, other than a document provided that showed the schematic of the ship, a silhouette and so forth.

Q. Now you had almost 72 hours to complete your Preliminary Inquiry is that correct?

A. I actually commenced at 1400 on Sunday and completed it about midnight on Wednesday, so, I had about 3 1/2 days, if you have long days.

Q. Yes, sir, in order to accomplish this tasking, you had to rely on a variety of people to provide multitudes of information, is that correct?

A. Absolutely.

Q. Now, you didn't have time to directly supervise the work of these participants did you?

A. No.

Counsel for LCDR Pfeifer, party (LCDR Stone): Can I take a minute, sir. At this time, sir, I'm getting into areas where LCDR Harrison may be called as a rebuttal witness.

PRES: You want him to leave?

Counsel for LCDR Pfeifer, party (LCDR Stone): Yes, sir.

PRES: LCDR Harrison, would you leave the courtroom, please?

[LCDR Harrison did as directed.]

CC: Let the record reflect that LCDR Harrison has left the courtroom.

Q. You did not have time to directly supervise the work of the participants, did you, sir?

A. No, I did not. For the most part I did not, there were some brief periods where I was able to give direct guidance to them in small numbers for a few of the cases. But generally, I did not supervise them directly is accurate.

Q. Now, your Preliminary Inquiry does contain 39 enclosures, correct?

A. Yes.

Q. And there were other documents that you looked at that didn't become part of your enclosures?

A. Yes.

Q. Now because of your deadline, I think you stated that you would like to have been more thorough, but you just didn't have the time. Is that an accurate statement, would you agree?

A. That is certainly accurate.

Q. And you would agree, of course, that the Preliminary Inquiry is by no stretch of the imagination complete and a complete investigation?

A. Absolutely is not.

Q. Would you also agree with me that then that the accuracy is contingent upon the accuracy of the work of the people that are assigned?

A. To some degree, but not completely.

Q. With respect to crew interviews and interrogations of the party, you relied on LCDR Harrison and Commodore Byus to summarize their interviews of crew members, did you not?

A. Except for the ones that I interviewed, that's correct.

Q. Now you interviewed, I guess it was determined to be about 8 and that left 16 or 17 people to be interviewed?

A. That sounds about right.

Q. Now, you would agree with me there, there are a number of reasons that may play into whether these summaries are accurate would you not?

A. We made every effort to try to maintain them--or to achieve accurate summaries, but obviously there are potentials for errors that would detract from their accuracy.

Q. Well, Commodore Byus and LCDR Harrison did not record these interviews, did they?

A. No.

Q. And SUBPAC and the Government does have tape recorders, do they not?

A. Well, we had the option of recording, but we chose not to on legal advice.

Q. Was that LCDR Harrison's advice?

A. Yes, it was.

Q. Well--yes, sir, if they were potentially not effective note takers, this could impact it, is that not right, sir?

A. Humans were doing this interview process and then recreating it on paper and all the frailties of humans come into play here for potential errors.

Q. Yes, sir, and isn't it also true, sir, that they may have not captured everything in the proper context or prospective?

A. Well, we tried to avoid that potential to the degree we could by having both LCDR Harrison and Commodore Byus reach a consensus because they were both present and then they tried to get the document edited by the interviewee for accuracy and they would make corrections that the interviewee wanted to make to the degree the time was afforded us the option allowing the interviewee to do that. Except perhaps, the parties did not have a chance to do that for reasons of legal protections.

Q. Now, isn't it also true, sir, that LCDR Harrison and Commodore Byus did not type most if not all the statements themselves, they were passed over to a Yeoman?

A. One or two I think were typed by Commodore Byus and the others were all eventually typed by a Yeoman.

Q. Now, isn't also true that may be a person's inability to communicate might impact the accuracy of this summarized record of what they may have said?

A. How do you mean inability to communicate.

Q. Just for whatever reason, can't get across what they're trying to say?

A. Well that's possible, certainly of course that's why we had them read it afterwards and edit it for those that were not parties, for those who allowed us to.

PRES: Counsel, do you have someone particular in mind? I'm interested when you ask that question, is that a general question or are you going to ask some specific questions about individuals?

Counsel for LCDR Pfeifer, party (LCDR Stone): Sir, I'm setting up for a later argument down the road.

Q. Now personal biases may fit into the accurate taking of a statement. Is that true?

A. Yes.

Q. Again, you stated that you never actually interrogated any of the parties?

A. That's correct.

Q. Now, you never reviewed Commodore Byus or LCDR Harrison hand written notes that they took, did you, sir?

A. That's correct, I did not review their handwritten notes. There maybe--no, there are no exceptions to that, I did not review handwritten notes.

Q. Now, it is then possible that some of the information that was passed from LCDR Pfeifer to these individuals may not have been written down, is that true?

A. Yes.

Q. And would you agree with me then as far as your Preliminary Inquiry goes, the accuracy of I believe it's enclosures 2 through roughly 24, the personal statements are entirely contingent upon the accuracy of the work of LCDR Harrison and Commodore Byus, outside the ones you did yourself, sir?

A. And, additionally the administrative assistant. So, yes, I would agree.

Q. Now with regard, sir, to your Preliminary Inquiry, you only really find one finding of fact with regards to the Executive Officer and that's fact number 10d. It basically states that the XO recognized inadequacies in some other key prerequisites evolutions etcetera, etcetera, and chose not to make the CO aware, is that?

A. Yes.

Q. Now, would you agree with me that this fact is primarily on two concepts, the Executive Officer knowing--having knowledge of the problems and then also failing to communicate them?

A. Yes.

Q. Now, sir, the logical conclusion with regards the taking these statements or results of interview would mean that if the results of this interrogation were misinterpreted or otherwise flawed, then the finding that you had based may also be inaccurate?

A. Obviously that's possible.

Q. I think you said it once, sir, that LCDR Pfeifer never really actually did review his statement?

A. I don't believe he did. It could be an error, but I don't believe he did because I think that by the time we would've had it ready for him to review. We were in a position where we needed to afford him article 31(b) rights.

Q. Yes, sir, if you have enclosure (3) with you, sir, do you have the Preliminary Inquiry?

A. I probably can get it here.

[CDR Quinn handing Exhibit 1 to witness.]

Q. Sir, I would like to direct you attention to enclosure (3), which is LCDR Pfeifer's statement.

A. I'm there.

Q. Now on Monday, sir, I believe you testified that on 1306 the XO went to the Commanding Officer and reminded him about "Papa Hotel" time, and the CO responded he had it under control, do you remember that?

A. I remember making the statement, I didn't remember the time.

Q. If you were to look at the first paragraph of that statement I think--I think just need to correct here I think you're referring to the time the Executive Officer approached the Commanding Officer at 1326 and the response was that he had it under control?

A. I agree that that's what this says.

Q. Also, sir, within that paragraph, there are two other times when the Executive Officer communicated about a late lunch to the Commanding Officer, that would be right after lunch had ended and then at 1306, is that also true?

A. Based on the statement that I'm reading, I can see that it was true, that time 1306 based on the statement at 1306, XO went to CO and told him 5, 4 minutes to "Papa Hotel", we needed to get going. The earlier lunch ended portion does not really say that

it say, that he told the CO that the MS's had prepped the ship and they were ready for angles. But, it doesn't imply anything about being late and so forth.

Q. But at least within that first paragraph the Executive Officer did mention that he had talked to and communicated with the CO about the ships schedule three times prior to commencement of angles and dangles?

A. Correct.

Q. Now, sir, are you aware that the original notes from LCDR Harrison and Commodore Byus actually report instead of saying the CO responded, he had it under control, one of those individuals actually says that the quote was, "I know what I'm doing." Are you aware of that change or that difference?

A. No, I am not.

Q. Are you also aware, sir, that the phrase, "XO thinks that is very aggressive" is actually a note written in the notes of one of the person and the Executive Officer never actually said that?

A. I was not aware that the Executive Officer did not actually say, I wonder why the note taker would have annotated that though if the XO had not given the note taker that impression in some way.

Q. Are you aware, sir, that one of the notes contained the statement "XO may not have been looking at sonar prior to the one-two-zero leg." It's not necessarily in the statement--it's not this result at all?

A. I'm not aware of anything that's in the written notes isn't in the statement because this statement what's what I based my deliberations on.

Q. Sir, this here [placing Exhibit 8 on the wall] is the one-two-zero leg, correct?

A. Correct.

Q. Okay. And do you think it would have been important to put in that statement that if the Executive Officer would have gotten into Sonar or was not looking prior to this leg. Do you think that would have been important, prior to the one-two-zero leg?

A. Yes. If he wasn't in Sonar and if he also wasn't previously looking at fire control to see that bearing rate, which you know, you can kind of tell in different ways from both locations that he would know it existed.

Q. So then you would say, sir, that that omission by Commodore Byus and LCDR Harrison could have been critical in your decisions to refer LCDR Pfeifer to this Court of Inquiry?

A. Absolutely not, I wouldn't say that. Because, and if I can elaborate?

Counsel for LCDR Pfeifer, party (LCDR Stone): Yes, sir.

The XO's statement here talks about looking at screens very hard to tell if there was any one close. Difficult due to maneuvers, ship was turning and so forth, very quick to go to PD. XO and OOD did not really feel comfortable with contracts. You know, there were, to what I can see here, a feeling in the part of the XO that things were being hurried, and that's what I take out of that paragraph.

Q. Only if that, sir, would be an accurate recollection of what may have been said.

A. True.

Q. And if this statement is not an accurate reflection, then you would not have referred LCDR Pfeifer?

A. If it's not accurate, I would like to reassess my--my views based on whatever is more accurate.

Q. Well, sir, since you had the preliminary, I think that's what the court will be doing though.

A. Right.

Q. But----

A. I obviously want to make judgment based on the most accurate information available, and I thought this was it.

Q. Sir. Now, I would like to turn your attention to the bottom of the second paragraph, where it says, "XO and OOD did not really feel comfortable with the contacts." I think you had just actually repeated that. Are you aware, sir, that this statement, was only represented in one of the people's notes. It was not represented in the others. You're not aware of that are you, sir?

A. No, but I'm not surprised by that, I mean, you can imagine two--both people taking notes particularly one a layman in the field of submarining and one, a Commodore, would have different perspectives and would be recording different things based on what they heard because they can't record everything with a pencil.

Q. Certainly, sir, but if would turn to enclosure (4), which is the Officer of the Deck's statement, or results of unwarned interrogation. I don't think you will find anywhere, sir, where there's any communication between the Executive Officer and OOD, regarding contact picture.

A. [Reviewing exhibit.] That appears to be the case.

Q. Wouldn't that then lead you to the conclusion that this might have been another note or something put in by that individual as speculation?

A. I think, in general, I should make clear at this point that I had trusted the integrity and the deliberateness and the professionalism of both LCDR Harrison and Commodore Byus to be to the best of their ability, accurate in their written renditions of the interviews. And to the degree that there may be disparities between their two written accounts, I do not attribute that to malice of forethought, I attribute that to human processes at work and different perspectives from a lawyer and a seasoned line submariner. So--but I do expect that Commodore Byus, in conforming the statement that I got, would have taken those differences into account and not tried to mislead me with the end result, and so I trust that those individuals were diligent and professional.

Q. Certainly, sir. Now, I would like you to turn your attention, sir, to what would be the fourth paragraph, where this says, "hoped for chance to broach." I think it's the fourth line down.

A. I see it.

Q. Okay. Now you are also not aware then that on one of the statements--or one of the notes of this, one of those says, "XO wanted--XO broached 50 feet or something." That could be a substantial difference in the meaning of--besides XO wanted a broached look, does it not?

A. No, I see them as identical. 50 feet is synonymous with broached, that's the definition of broached when your sail leaves the water, that's the depth that it leaves it at.

Q. Well, what does the words, "or something else" mean, sir? Doesn't that denote that it could be something less than broached?

A. Well, if you're trying to do something similar to the sail leaving the water, less than that, as I guess one subset of the range of possibilities you're implying, but it's not what I would lead to be--it's not what I would assume the speaker was trying to achieve. Broached to me or 50 feet or something means as high as you can get. And "or something" would imply to me, "or as high as you can get," could be even more shallow than 50 feet.

Q. Or something less, as well? Isn't that true, sir?

A. Yes, technically.

Q. And, could it also be that maybe this just should have been put in the results for you to consider. It's kind of hard for--to have you go back in hindsight, is that not true?

A. Again, I want to state the Commodore Byus and LCDR Harrison were under no illusion of the importance of these written statements. And I trust their judgment on how they ensured that these met to their best of their ability on what they thought they heard the speaker say. And, the only way to truly find out what the speaker said is to get testimony from the XO, and I would suggest that that would be a wonderful thing to have, to get at what really happened, but I trust absent that type of definitive correction, that Commodore Byus gave me a good product.

Q. I'd also like to call your attention to, sir, the very next part where it says, "very short time when CO ordered emergency deep." Now--last--a couple of times in the last couple of days, you stated that the CO called an emergency deep for training. Do you remember that, sir?

A. Yes, I remember saying that it was emergency deep for training because they didn't have a collision they were avoiding at that point, which would be the reason to do it if it wasn't for training.

Q. Now, but isn't it true that throughout the course of your entire investigation, the only place where it says the exact words that were said, "emergency deep for training," are in the Commanding Officers unsworn, or unwarned interrogation?

A. I think we may have a failure to communicate here. An emergency deep is what would have been stated, and that would have been the command that the crew would all execute to. The fact that it was for training is a parenthetical addition by me, and that means they weren't avoiding a collision at that moment in time.

Q. That's--that's what I wanted to get at, sir.

A. Okay.

Q. Thank you. Now, if someone calls emergency deep in a submarine--emergency deep is a--well you testified that emergency deep, people begin their automatic actions. Is that correct?

A. Yes.

Q. And emergency deep is a casualty procedure, is it not?

A. Yes.

Q. And you would expect at the time somebody calls emergency deep that they react?

A. One would hope. And the crew should, you know, consider it as real until told otherwise, so they don't know it's for training and they should be executing just as if there was about to be a collision until they're told, "this was for training" on the way down.

Q. Now if you were an Executive Officer and you heard this, would you then--you're somewhere right near to the Control Room and you heard the term "emergency deep" wouldn't you also immediately turn your attention to the Control Room?

A. Yes.

Q. And you would watch and make sure that all of the watchstanders were following their required steps in the terms of an emergency deep?

A. Absolutely.

Q. Sir, would you please look at the absolute next sentence where it says, "XO's attention was now in the Control Room."

A. I see it.

Q. That conforms to what you are stating, does it not?

A. That's right. He's doing exactly what I would expect him to do.

Q. So this, "XO's attention was now in the Control Room" should not in any way be--I mean that's very normal submarine----

A. That's a good thing.

Q. Isn't that also an idea of forceful backup that you talked about yesterday? He's backing up the command to make sure that they're doing the actions that they need to do?

A. Absolutely.

Q. Now you also testified yesterday, sir, that one of the--when you do emergency deep and then the emergency blow, that one of the things that you want to do, is you want to get down and right back up before the contact picture changes. Is that correct?

A. Yes, that's correct.

Q. Sir, can you then look at the next sentence, and what does that say?

A. [Reviewing document.] It says, "XO remembered thinking, we need to get right backup."

Q. Isn't that also consistent with what you testified to, sir.

A. Yes, so I think he's thinking very clearly at that point and on the right thing.

Q. And isn't that also an example forceful backup? That if these distinguished visitors, who are now being put into the chairs to pull the handles or to sound the horn, if they get in the way and they delay this emergency blow, this submarine could have a problem, correct?

A. Yes.

Q. I mean aside from----

A. Yes.

Q. Aside from the tragedy.

A. Yes.

Q. So, it's then important for people in the Control Room to be making sure that these evolutions take place?

A. Yes.

Q. And so by saying this, isn't this another example of the forceful backup that you said the Executive Officer may have lacked?

A. Yes. I questioned--when I say he may have lacked it, I wasn't talking about this portion of the evolution. I was talking in very specific terms on different aspects of the evolution.

Q. And that was, in part, the TMA leg, the one-two-zero, right?

A. The TMA period.

Q. Right.

A. Not just the three-four-zero leg.

Q. Which we've stated that he's at least told them that he wasn't there for, correct? The three-four-zero leg.

A. Well, now let me stop you here because I think your developing a misconception. He may not have seen the bearing rate generated from that short leg, but he knew it was a short leg and probably not a good leg, so he knew that with regard to the legs that you do want to have before you go to PD, he had a very good awareness of what had not happened yet regardless of the bearing rate or not being discovered. So, you know, there's the bearing rate issue, but then there's a broader issue, okay, what kind of TMA do we give credit to the ship for having conducting in here, and he was aware of that because he can interpret the screen displays to know when the ship was turned and slowed and so forth. But--so I was referring, in general, to

the execution of that TMA and the manner in which the ship did the searches at periscope depth when I talked about the forceful backup criticism of the Exec, and not any of the other evolutions, which frankly, I think he probable did very well in.

Q. With regard, sir, to the forceful backup at periscope depth, didn't you just testify that the minute somebody calls an emergency deep, that you were to react?

A. Yes, I did.

Q. And isn't it also true that you do not override a person that calls emergency deep on the scope?

A. Yes, and I know where you're going, and you make a good point that once the CO said emergency deep it's not impossible for the XO to say, "you didn't really mean that, Captain. We need to look longer and more shallow," and so forth. His opportunity, his window, was prior to that announcement of emergency deep. It was an opportunity that was there though.

Perhaps he didn't anticipate the moment the emergency deep command would come out, and that is a handicap he was suffering under, to not anticipate that, and I agree with that, but nevertheless, there was a finite period that he could have influenced how the ship was operated before emergency deep was announced. But, you make a good point, he couldn't necessarily anticipate when the CO would say that, and therefore, maybe his plans to say something about the depth were precluded by that. I mean sooner than expected.

Q. And that's assuming that the Executive Officer is focused on the Control Room and watching the Commanding Officer conduct periscope operations, correct, sir?

A. Yes.

Q. And isn't it true in his statements that his attention didn't go into the Control Room until after the emergency deep was called?

A. Well, I have to disagree with you there. The statement leads me to believe by this point he was either in Control or looking through the Sonar door into Control, because he's observing the manner in which the periscope's being operated firsthand. So he's looking in Control when he makes the statement, his intention was now in Control Room. I think that's where he's saying exclusively as opposed to sharing his intention between Sonar and Control.

Q. Okay, so you would agree then at least as far as from the time the emergency deep is called, I mean at least what we can kind of clean out of this, from the time emergency deep is called through that, he's doing what he needs to be doing, the forceful backup, everything that a good Executive Officer---
A. Yes.

Q. He's right on the money?
A. Yes, absolutely.

Q. Now---
A. Now, may I just add though?

Counsel for LCDR Pfeifer, party (LCDR Stone): Yes, sir.

He knows how long they were at PD, he knows what their depth was, they're on there way down, they haven't done the emergency blow yet, another opportunity has just arisen for him to quietly tell the CO, "How do you feel about things? Are you really sure we got a good enough look?" And so forth, so he knows the TMA at this point, that's past tense and the look is past tense and there is an opportunity while going down for a few minutes. So, just to make the point, the world didn't stop with the words "emergency deep" for his chance to intervene before the emergency blow.

Q. But with regards to the periscope search--sir, you labeled that the XO was roughly in this area [pointing laser at exhibit]. Isn't it true though that there were other officers here [pointing laser at exhibit] right next to the scope, and the Chief of Staff for SUBPAC was at this area here [pointing laser at exhibit] in equal distance, actually even closer to, the Number 2 scope, which was being used?
A. I would say approximately the same distance, yes.

Q. And they didn't choose to stop the Commanding Officer for this look either, did they?
A. No.

Q. Now the response regarding TMA legs on the Executive Officer's--on the second page, is written "course on one-two-zero was probably long enough if we had a good first leg." Are you aware that in the notes, the other person wrote, "if the first leg was good, then XO thinks the second leg was good." Does that tend to change the meaning of the XO's knowledge with regard to the three-four-zero leg, to you?
A. No, no. I think they both mean about the same to me, and that is, the one-two-zero leg was a good leg, taken in isolation. And would have been sufficient if the earlier leg was also a good

leg to make a better judgment than what was made. So I, you know, if--but again, even though he wasn't observing that first leg, he knows the duration of it and the dynamic nature of it from looking at the display, you know, that's not information that he couldn't tell at a glance, he could, even after the fact.

Q. Sir, I have one more question with regards to statements and taking statements. Are you aware, sir, that within your investigation, the enclosures that were submitted, that two of these statements are the uncorrected copies of individuals that were given the opportunity to correct them? They corrected them but then that--those documents were not provided to you for enclosure into the final docket--final document?

A. That's--that--I certainly would believe that's possible, with the pace we were working. Which individuals are you talking about?

Q. One of them, sir, that I know is Petty Officer Reyes, the alternate Sonar individual that----

A. First Class----

Q. First Class, yes.

A. Qualified?

Q. Yes, sir, the STS1 Reyes that was in and out of Sonar.

A. Okay----

Q. And I believe the other one was, I would have to check, Petty Officer Harris, the Chief of the Watch. I believe so. I'm not 100 percent sure on that one, but I know Reyes.

A. Okay. No, I wasn't aware of that.

Q. Sir, I would like to turn your attention to enclosure (34) of your Preliminary Inquiry.

A. Okay.

Q. Sir, enclosure (34) is the document that determines maximum periscope range. [Approaching Power Point projector.]

A. Yes.

PRES: Counsel, I think we'll pull that out, so we get it to the top of the--we'll help with the lights.

Counsel for LCDR Pfeifer, party (LCDR Stone): Okay, sir.

PRES: Well there you go. Go ahead and back it up just a little bit here. Back up your display, please.

Counsel for LCDR Pfeifer, party (LCDR Stone): Yes, sir.

PRES: There you go ahead. I think everybody can read that.

Q. Sir, today--this morning, you talked about the height of a periscope in a trough?

A. Yes.

Q. This is the equation that discusses that, is that not true?

A. It looks like it.

Q. Okay----

A. I don't have it memorized, but I assume it is.

Q. Now, sir, you described--your conclusions on enclosure (34) state that the maximum detection to be--of the EHIME MARU, to be roughly around 2,000 yards?

A. I would call that the--for all these permutations that would be the minimum of the maximum detection ranges, yes. There's a large number of them here and that's as low as it gets.

Q. Okay, and you use this term, the maximum detection range of 2,000 yards in your finding on "8d" of the third little dot and "e" to say that the periscope search was inadequate due to the sea state. Is that correct? [Handed exhibit to witness.]

A. Okay, I'm sorry. Where is "8d and e" and so forth?

Q. Those are in your original findings of fact.

A. Okay. Just hold on a second then I'll get back to them.

CR: Is this Enclosure (34)?

Counsel for LCDR Pfeiffer, party: That's my diagram. We'll have to mark that as the next exhibit.

WIT: Yes, I'm with you now.

Q. Now were you aware that there are a number of flaws and assumptions in your chart that were prepared for you by LCDR Hutton?

A. No.

Q. Well first the information that was provided you used 6, 8, and 10 feet?

A. Yes.

Q. As the wave height. Now you had testified earlier that you thought 8 and 10 feet for watching--from viewing videos. Is that correct?

A. 8 to 10 feet actually was the range of the METOC buoy 200 miles away from the collision. I also wanted to bring a lower wave height in to try to mesh the METOC buoy data with estimates that were a little lower than that from many of the witnesses. And then I finally used the video displays, that CNN provided and others on TV, that we were able to see to become comfortable that 6 to 10 feet is a logical boundary of what I was looking at. So it was kind of a collage all those sources, I thought those were pretty good boundary conditions to make the calculations from.

Q. Okay, sir, I think it's easier if I just show you part of the enclosure that talks about [approaching witness] when you're dealing with swell height with regards to this. [Pointing to enclosure at witness stand.] It's this one.

A. Okay.

Q. If you could look at that, isn't it true that that says that the swell height of the METOC buoy, 51003, at the time of the collision was actually only 5.7?

CR: For the record, was that the same----

Counsel for LCDR Pfeifer, party (LCDR Stone): Part of the enclosure (34).

WIT: This is actually part of enclosure (35), I think. At least this is marked as (35).

Counsel for LCDR Pfeifer, party (LCDR Stone): I stand corrected.

WIT: Okay, this collision would have occurred on the 9th around almost midnight, Zulu, going into the 10th, correct?

Q. Yes, sir.

A. So we're talking roughly 8 feet, the way I read this graph.

Q. Does that not hit about 5.75, sir?

A. Well, you know, these are separated by less than an hour and this is up here to over 8, so, you know, it's pretty variable.

Q. Yes, sir.

A. I'd say that 6 to 8 is how I'd call that.

Q. Now----

A. And, of course, that was not at the exact location of the collision, so there's some subjectivity in how we make this

assessment. I look to try to just bound reasonable amounts, but if the height was less, you would be able to see more for given scope exposure, and if the height was actually less than the boundaries I've established in here, it would be less of an impediment to the CO to see farther.

Q. And with a less of a sea state, it would be less for the Executive Officer to be aware of how bad the sea state was. Is that also true? If the sea state was less, then the Executive Officer would have no reason to question the Commanding Officer looking through the scope. Is that also true?

A. I'd say there's matters of less degree reason, but of course his statement was, 'he had wished the CO had broached,' and so that's really what I was keying on, not the--you know, when I went through this table I was trying to explain how a good Skipper, experienced on a scope, would not see a target 2,000 yards away, and so I was looking for reasons to help try to explain that.

When I built this table I was not trying to use it as a metric to determine if the XO should have intervened. I mean, to mind when the XO said he should have inter--not intervened, but when the XO said he was uncomfortable with the CO not broaching, I took that at face value, that the XO was uncomfortable.

Q. And now since that time, sir, you have learned that there is inconsistencies in the individuals that took, that wrote down the statements with regard to what the Executive Officer said regarding a broached look.

A. Recognizing I've said I have faith in the people who generated these statements, doing a good job, I think the court should look at the rougher data, the raw data, and perhaps reevaluate whether these statements are accurate.

Q. And, sir, they certainly will be made exhibits. Now, with regards to the data on your chart, sir, using 6, 8 and 10 feet, and the fact that it was 200 nautical miles away from the collision site, are you aware that LCDR Hutton did not use any scientific formula for whether patterns to try and compute swell length or wave height back to the crash--to the collision site?

A. You mean get it scientifically transposed from 200 miles away?

Q. Did his best guess. He did not do that, are you aware?

A. No.

Q. Would you also admit that there are at least--there are scientific formulas in which he could have done that?

A. I would not be surprised to know that. And frankly, if there

are more scientific ways to do all this analysis, that's good work for the court to still look at doing.

Q. Also, sir, I'd also like to make the point that this formula that LCDR Hutton used came directly out of the submarine publication, Submarine Tactics.

PRES: Counsel, is this going to be another exhibit?

Counsel for LCDR Pfeifer, party (LCDR Stone): Yes it is, sir. I do have a copy of it.

PRES: Well, before we go there, let's start cleaning up here. Counsel for the Court, let's make sure we get these marked as an exhibit.

CC: Yes, sir.

CR: This will be marked as Exhibit 25 and this one will be marked as Exhibit 26.

Q. LCDR Hutton took this diagram from this document using this formula [pointing to exhibit], knowing what you know, sir, about the height---

A. Well, this says the divisor should be "2L" not "1/2L."

Q. Correct, sir, but when you look at--and that's my point. He did the math wrong, sir, because if we're judging the periscope here, in the mid trough, to determine the theta angle, you must bisect "L" in the half-point. Is that correct?

A. Yes.

Q. And so all of this data on enclosure (34) is wrong because he applied the wrong formula. Is that correct?

A. You're saying he did not--he did not apply this formula?

Q. [Approaching witness.] He applied that formula exactly, sir----

A. I see.

Q. Which is "2L" instead of "1/2L," which makes this, the entire enclosure (34), if it's accurate, off by a factor of four. Is that not correct?

A. Yes, if that was in fact the error made, that would be a factor of four.

Q. Thank you, sir. [Retrieving exhibits from witness and handing them to court reporter.]

A. And again, I think the recalculation should be run through.

CC: Counsel, are you done with the overhead?

Counsel for LCDR Pfeifer, party (LCDR Stone): Yes, sir.

CC: Okay. Bailiff, will you turn it off then.

[The bailiff did as directed.]

CR: LCDR Stone, do you have the original there, Exhibit 26?
Thank you.

Questions by counsel for LCDR Pfeifer, party (LCDR Stone):

Q. [Resumed seat.] Also, with one last question, sir, with regards to this equation, if also assumed a 9 second--Sir, did you have any indications with regards to there not being any wave slap or swell height prior to your writing your Preliminary Inquiry?

A. Wave slap, yes. There were statements that said, basically that the optics were out of the waves, so not being slapped over by water, obscuring vision.

Q. If waves are not obscuring the vision, then it would be potentially more likely that the periscope may have been able to see to the horizon?

A. Yes. I thought about that. There's two types of obscuring, the swells in the way of your line of sight or your actually underwater, and I'm more confident the latter was not the case from the statements than the former, based on my reading of the interview statements. So, you know, not having swells in the way with these depths order and the swells that were reported, you know, it's was not logical that they wouldn't occasionally be in the way. But the head window being underwater I don't think was a problem based on the interviews that I've heard.

PRES: Counsel, are you finished with this discussion with formula?

Counsel for LCDR Pfeifer, party (LCDR Stone): Yes, sir, I have.

PRES: You have? Because I'm interested in something. You've made the point that it's a factor of four off.

Counsel for LCDR Pfeifer, party (LCDR Stone): Yes, sir.

PRES: Is what I assume, so let me ask RADM Griffiths a point then.

EXAMINATION BY THE COURT

Questions by the President:

Q. In--how does that effect the enclosure, you got a factor of four now? Does that go to the ranges that we are going to talk about in the enclosure or----

A. It implies that you can see farther than the table shows and therefore the efforts the ship went through are less hampered by these considerations than the table shows.

Q. Okay----

A. And so that's something for the court to resolve.

Q. Just based on the formula alone though, we've got a factor of four in terms of our range calculation that we've showed that we would expect the ship to be able to see that day. I just want to make----

A. Yes.

Q. That it's clear.

A. That's clear and that needs to be resolved. There may be a problem in that enclosure.

REXCROSS-EXAMINATION

Questions by counsel for LCDR Pfeifer, party (LCDR Stone):

Q. And, sir, if the scope was above the swell, none of this discussion would even apply because you would have an unobstructed view?

A. Right.

Q. And if you have an unobstructed view of a 71 foot masthead sail, you're looking at roughly about 18,000 yards top of the line of sight?

A. Yes. Although my--my experience is you don't see small contacts that far away so that's the theoretical answer.

Q. And if you used--and if you brought down, as you did, sir, to about 50 feet down the masthead, you're looking still at about 8--a little over 8 nautical miles?

A. Yes. I think I used 55.4 feet as the assessment. I didn't have this exact information earlier today. From this table, we used 55.4 feet from the waterline to the top of the mast and 32 feet to the top of the black striped stack and 23.4 feet to the top of the Bridge, and that was just based on scaling from what

we saw from the diagram and a kind of a input from the, I believe from the Master, on the waterline. Where the ship would be--what's the ship's laden condition.

Q. Sir, I'm not going to ask you to guess anymore--actually attached to the enclosure that the members will have is actually the line of sight distance to the horizon diagram based on height and feet so----

A. Okay----

Q. We don't--we don't even have to----

PRES: Well, help me out there, okay. We've been talking about 25 feet, we've been talking about making sure there's a--something you can see, I think there was a discussion earlier about a mast and being able to see the mast, and RADM Griffiths took us through a discussion of getting down to the top of the Bridge and the superstructure that we're--you're more likely to see, so based on that height, what kind of distance are you talking about?

Counsel for LCDR Pfeifer, party (LCDR Stone): Sir, at the nautical mile distance, at a--for 70 feet is 9.8 miles; for a 50 foot, it is 8.3 miles; for 30 feet, it is 6.4 nautical miles; for 20 feet, it is 5.2 nautical miles; for 10 feet it is 3.7 nautical miles----

PRES: I got it.

WIT: We have to kind of come back to ground truth though. The ship was a mile away, we know that, approximately a mile away at this point in time and it wasn't seen. And it wasn't seen--we know at least at one point it was somewhere in the optical view, theoretically, from where the scope was looking. We know the scope wasn't broken and we know we had a good periscope operator. So in looking at additional factors of why the ship did not detect the EHIME MARU, visually, what I was trying to do is show the court in the Preliminary Report all the factors that could hinder the ability of the CO to see that ship. And, sea state and swell height may have been incorrectly calculated, but it is a factor when you're operating with your head window within 4 feet of the surface of about 6 to 8 foot swells and the haze and so forth. So----

Q. Would you agree with me then, sir, that it's a factor for those individuals to look through the scope, and not for those who did not look through the scope?

A. No. I think it's an also--I think it's an issue of general ship's safety and I know the XO's always worried about general

ship's safety, and I don't think he would have said, "Gee, I wish we'd have broached" if he didn't really mean that, and I know the reason he said that is it gives you a higher look. I can tell you, in my career, I've never done this emergency blow evolution without broaching first, ever because that gives you your best look.

MBR (RADM STONE): I had a point for LCDR Stone. For clarification, you were making commentary concerning the assessment of what the actual swell--the sea state was at the time.

Counsel for LCDR Pfeifer, party (LCDR Stone): Yes, sir.

MBR (RADM STONE): However, very shortly after the collision, the GREENEVILLE was on the surface and was able to get a very good look at what that sea state was like. In fact, it was to the extent that the boat was unable to open the forward hatch and put people on up there. Is there some confusion, you believe, on what that sea state was actually like? It seems like they had an eyeball view on that as part of the SAR effort that reinforces how bad it was.

Counsel for LCDR Pfeifer, party (LCDR Stone): Sir, I have--I certainly have a theory. I don't know if I'm allowed to say it, in the point that I will now be testifying, but submarines are round, swells roll up submarines much easier than they do destroyers and little waves can actually cause the forward hatches not to be opened, so I guess I just testified.

MBR (RADM STONE): No, I was looking at trying to capture the point you were trying to make, so now I realize where you were going with that and we'll be able to look at what the records show for the sea state, as evaluated by the Commanding Officer, after the boat was on the surface and what was recorded in the log, to ascertain what those numbers were. Thank you.

Counsel for LCDR Pfeifer, party (LCDR Stone): Yes, sir.

Q. Sir, on your very first day of testimony, you had stated that this position of the Executive Officer is pursuant to the SORM. Could you elaborate a little bit on that, please?

A. Well actually, I'm not sure you'll find this diagram in print anywhere other than where you're looking at it. We drew from the SORM and experience to create the diagram. It was intended to be a simplified functional diagram to show the full audience here of how the submarine watchbill really works. And so, we put the XO in there, who of course, is not on watch per se ever, unless the CO makes him a Command Duty Officer, which is not the case here,

but the dotted lines show that it's less than a formal watch responsibility that is being indicated here, unlike all the other--of course, the CO is obviously not technically on watch either, but all the other individuals here, there are solid lines to show they are watchstanders. The CO and the XO are unique in that--in their relationship to watchstanders.

Q. And I guess my only point on this is that as a non-watchstander, he's not automatically in the chain of reporting from potentially ship's Control, contact management, Navigations, that go to the Officer of the Deck and then up to the Commanding Officer?

A. You're right, he's not automatically in that.

Q. Not saying that he's still not the Executive Officer, which----

A. Me neither----

Q. Which carries burdens in and of itself. Yes, sir?

A. I'm with you so far here.

Counsel for LCDR Pfeifer, party (LCDR Stone): Yes, sir. Can I have just a minute, sir?

PRES: Certainly.

[LCDR Stone approaching Power Point projector.]

PRES: Counselor, you're going to have to turn the lights down, turn them all the way down, there you go.

[LCDR Stone did as directed.]

Q. Sir, when you first looked and said that this 6 degree bearing range was very noticeable, and you were----

A. It was noticeable to me, in hindsight.

Q. And this is based on a previously unrefined SLOGGER data, correct, sir? This--the original enclosure (8).

A. Yes.

Q. Okay, now, what's been put up here whereas was alluded to in the court today, is we're going to have a new expanded time/bearing chart, it's going to look very similar to this. What do these green lines, here [pointing to exhibit] if the course changes have changed, doesn't it obscure this line? The ability to read this 6 degree bearing rate change?

A. I'm not overly familiar with SLOGGER recording systems, and so I'm not aware of whether or not they truly visually blank out

the bearings, so you're not able to see what the bearings are during its turns. If this is a Contact Evaluation Plot type of annotation, this shaded area would indicate a period where the ship is changing course. You would not physically lose an ability to track where the bearings are, they would just be less reliable during the turn, but you would still see them, so is that what you are trying to show here?

Q. But you would not necessarily measure bearing rate in these turns, is that correct?

A. Correct, you would not measure during a turn because then you're getting a--the formulas don't work.

CC: Counselor, could we have this new exhibit marked next in order?

Counsel for LCDR Pfeifer, party (LCDR Stone): Yes, sir.

WIT: And if your point is that there's even less data then the leg is even shorter than I thought it was, I will grant you that from what this appearance is that it is an even shorter data leg of--it looks like a minute, which makes it an even less useful TMA leg. It gives them less time to see that high bearing rate.

CC: Excuse me, but before we proceed, do you have a paper copy of this that we can mark as an exhibit?

Counsel for LCDR Pfeifer, party (LCDR Stone): We'll have to get a different--we'll use this as a substitute, it's not completely colored right.

CC: If it isn't exact, when we're done--we'll mark this right now as the next exhibit in order.

CR: That would be Exhibit 27.

CC: Please provide the court a paper copy.

Counsel for LCDR Pfeifer, party (LCDR Stone): Yes, sir.

WIT: If I can, sir, the point I would like to make--the shorter this bearing--the shorter this leg gets, the worse the story is on how the ship conducted TMA because although they have less chance of see the high bearing rate, I'm sure they didn't see it, I know they would have reacted if they did, but again, the whole point I was trying to make along with my testimony is, the legs were not sufficient in duration or length or numbers to be a good TMA, and this would indicate that case even more strongly than this display.

Q. But this also would lead those individuals that are using tripwires to potentially come to a different conclusion regarding this high bearing rate, is that not true?

A. I don't know what you mean by that.

Counsel for LCDR Pfeifer, party: I think I can probably save that for argument.

WIT: I don't think anybody recognized the high bearing rate situation, Sonar, fire control, officers, period, because I'm sure any of them or all of them would have used that information to great good had they recognized it.

[LCDR Stone approaching Power Point projector.]

PRES: Before you turn that off, counsel, let me make sure I understand this. You show a crossed-hatch area there that unlike this previous diagram we've been using, the implication is to me is that somehow the cross-hatched area eliminates the ability to view contact data--sonar contact data? Is that correct?

Counsel for LCDR Pfeifer, party: Sir, it does not eliminate what's coming in, but because of the submarine in a turn, it degrades the ability of people in Sonar to necessarily judge exactly what it is.

PRES: Okay, that's my conclusion too. I just want to make sure that it's clear then, but you show the crossed-hatch over that data now, so you can't see it.

Counsel for LCDR Pfeifer, party: Yes, sir.

PRES: You just--it's not reliable in terms of evaluation of a drift rate, and therefore, an ability to see what the contact is actually doing in terms of potential course and speed.

Counsel for LCDR Pfeifer, party: Sir, that is also my understanding.

PRES: Okay.

Counsel for LCDR Pfeifer, party (LCDR Stone): Does anyone else have any other questions?

WIT: Just to refer back to the XO's initial interview statement. He implied discomfort with the amount of time on legs--the amount of TMA and this would be an example of why I can see why he felt that way.

CC: Are you done with the Power Point slide?

Counsel for LCDR Pfeifer, party (LCDR Stone): Yes, sir.

CC: Bailiff, would you please turn off the Power Point and push it forward, please?

[The bailiff did as directed.]

Counsel for LCDR Pfeifer, party (LCDR Stone): Sir, if I could have just a minute? I think I have a lot of duplicates from this morning. Sir, I just have a couple more questions.

Q. Sir, did you have LCDR Harrison or Commodore Byus question anybody regarding the professional competency of LCDR Pfeifer?

A. No, not that I'm aware of. I didn't direct it and I'm not aware of anybody doing that.

Q. Did you happen to review his fitness reports?

A. Certainly not.

Q. Would it surprise you that LCDR Pfeifer was the top ranking Executive Officer in Squadron ONE, last year?

A. It certainly would not surprise me.

PRES: Could I ask a question on that. I want to make sure I understand.

EXAMINATION BY THE COURT

Questions by the President:

Q. What I understand is that--does a Squadron rank XOs?

A. It's for Administrative Boards, Admiral. It's common practice in the submarine waterfronts to formally rank and then provide that to the COs to put in the fitness reports of the officers, so that Admin Boards see that and it's real.

Q. So, it's reflected in their fitness report?

A. Yes, sir, and I have absolutely no reason to be surprised by that.

REXCROSS-EXAMINATION

Questions by counsel for LCDR Pfeifer, party (LCDR Stone):

Q. Did you consider or were you aware that the Executive Officer actually pushed lunch up 15 minutes to account for time, was that discovered?

A. Not by me.

Counsel for LCDR Pfeifer, party (LCDR Stone): I have no further questions, sir, thank you.

PRES: Very well. Well, it's 12 after 4:00, and I'm not sure if counsel for Mr. Coen--what you feel, I don't mind proceeding here--I'd like to conclude exactly at 1630. I don't know how that would help you in terms of maintaining your coherency of where you want to go in cross-examination, so I give you the opportunity to make a recommendation to me whether or not you want to proceed right into your cross or if you want to now go ahead and recess the court and wait until tomorrow morning. What would you like to do?

Counsel for LTJG Coen, party (LCDR Filbert): Sir, I appreciate that. I think it would be best if we went ahead and recessed at this point and started anew in the morning.

PRES: Okay. Counsel for the Court, any comments?

CC: Yes, sir. I have some exhibits to publish. Bailiff, if you would give these copies to Counsels for the Parties?

[The bailiff did as directed.]

CC: Petty Officer Leather, if you would mark the following exhibits as the next court exhibits in order. The first exhibit is COMSUBLANT/COMSUBPAC OORDER 2000/201 Annex Foxtrot, Public Affairs, 5 pages. What exhibit number is that?

CR: Sir, that will be Exhibit 28.

CC: The next exhibit is COMSUBPAC Notice 5720 dated 30 May 1997 entitled "Duties of Squadron Public Affairs Officers," 6 pages.

CR: That will be 29.

CC: The next exhibit is CINCPACFLT and COMSUBPAC Embark Reports for 1999 and 2000, 52 pages.

CR: That will be marked as 29, sir. Excuse me, 30, that will be marked as 30.

CC: The next exhibit is information prepared by COMSUBPAC PAO relating to USS GREENEVILLE tours and embarks for 1999 and 2000, 7 pages.

CR: That will be marked as 31, sir, Exhibit 31.

CC: The final exhibit, information prepared by COMSUBPAC PAO related to USS GREENEVILLE embark of 9 February 2001, 41 pages.

CR: That will be Exhibit 32.

CC: Mr. President, that's all we have.

PRES: Okay, I'll make one comment here—I will make the bailiff available to any of the counsels to--for your exhibits, to move stuff around to provide for your efficiencies, that's true for all the counsels, including the Counsel for the Court, so don't hesitate to use the bailiff to do that for you to make this so that we're doing this with efficiency--a certain amount of efficiency. I certainly understand this is important to the parties, so you need to make sure that your questions are well developed. I think there's been sufficient preparation time for some of that. And so, those are my expectations, so let's make sure that we're trying to use the court and the assistance of the court to get through these type of matters in a manner that seems organized. That's not a criticism, I'm just pointing that out to everyone that those opportunities are available to you.

CC: Admiral, I have one more point. I think it came up a little bit earlier about resources of the Government not being available to all parties. As we've said from the outset when all of us were assigned, if the parties have anything that they want blown up, made charts, any supplies--I think you got your first group of supplies about 2 weeks ago, you tell us what you need to have done and we'll get it done. Okay, we want this to be an

absolutely fair process for everybody and CINCPACFLT has made those resources available to all parties.

PRES: Very well. Thank you. This court is recessed until 0800 tomorrow morning.

The court recessed at 1615 hours, 7 March 2001.