IN THE TRIAL COURTS FOR THE STATE OF ALASKA

THIRD JUDICIAL DISTRICT

AT ANCHORAGE

STATE OF ALASKA,

Plaintiff,

vs

JOSEPH HAZELWOOD,

Defendant.

No. 3AN 89-7217; 3AN 89-7218

TRIAL BY JURY
MARCH 6, 1990
PAGES 6088 THROUGH 6263

VOLUME 33

Original

H & M Court Reporting
510 "L" Street, Suite 350
Anchorage, Alaska 99501
(907) 274-5661

BEFORE THE HONORABLE KARL JOHNSTONE
Superior Court Judge

Anchorage, Alaska
March 6, 1989
8:43 a.m.

APPEARANCES:

For Plaintiff:

DISTRICT ATTORNEY'S OFFICE
BRENT COLE, ESQ.
MARY ANNE HENRY, ESQ.
1031 West 4th Avenue, Suite 520
Anchorage, AK 99501

For Defendant:

CHALOS ENGLISH & BROWN
MICHAEL CHALOS, ESQ.
THOMAS RUSSO, ESQ.
300 East 42nd Street, Third Floor
New York City, New York 10017

DICK L. MADSON, ESQ.
712 8th Avenue
Fairbanks, AK 99701

TABLE OF CONTENTS

WITNESS INDEX

EXHIBIT INDEX

PROCEEDINGS

MARCH 6, 1990

(Tape: C-3654)

(003)

(Jury present)

THE COURT: Resume the cross examination. You're still under oath, sir.

MR. CHALOS: Thank you, Your Honor. Good Morning, ladies and gentlemen.

(0027)

WILLIAM VORUS

recalled as a witness, having previously been sworn, upon oath, testified as follows:

CROSS EXAMINATION OF DR. VORUS, CONTINUED

BY MR. CHALOS:

Q Good morning, Professor Vorus.

A Good morning.

Q I'd like to speak about your trip to San Diego. I think you said that in San Diego you met with Mr. Greiner.

A Yes.

Q With Mr. Cole and with Mr. Adams.

A Yes.

Q Anybody else present?

A And Mr. Ackroyd (ph), the photographer.

Q Besides him, anyone else?

A There was an Exxon attorney present. So, that's my recollection.

Q Okay. Now, you viewed the damages on the bottom of the vessel, did you not?

A Yes.

Q Is it fair to say that the damage that you saw was the type that you would expect in a grounding on a rock bottom?

A Yes.

Q And most of the damage that you -- or, I'd say the majority of the damage that you saw was in the fore and aft direction.

A Yes.

Q You mentioned that you saw some evidence of transverse damage, toward ship damage, is that right?

A Yes, very subtle.

Q Which you say you attribute to the vessel pivoting on the rock at around frame 23?

A Yes.

Q Now, you use the word "subtle." What do you mean by subtle?

A Well, the marks on the plating were subtle. Much of the plating was missing. They were

transverse marks on some of the plating that was still in tact. I think the damage to the longitudinals was less subtle, displaying transversely, which I could also -- would think would be caused by that type of motion.

Q Well, you mentioned in yesterday's testimony that you could see this damage if we looked at the pictures. I have now put before you what's been marked into evidence as Exhibits 125 through 150. Can you take a look quickly and let us know where and what pictures you see that kind of damages that you're talking about?

A To the longitudinals?

Q Well, to the longitudinals, and also to the subtle scratches that you talked about?

A Is this a complete set of photographs?

Q Well, those are the photographs that Mr. Cole put into evidence. I assume they're complete.

(Pause.)

A Okay. All of these show the type of damage to longitudinals.

Q All right. For the record, let's identify what you're referring to. You're referring to Exhibits 142, 143, 144, 145, 146 and 147. Then you this shows the damage to the longitudinals,

is that correct?

A Yes.

Q Do you see in any of these pictures the subtle scratches that you...

A I don't know whether I do or not.

Q Well, just take your time; take a look.

(Pause.)

A I believe they're here; 146.

Q Your Honor, may we have Professor Vorus step up to the jury and show them what he's talking about?

THE COURT: All right.

Q You have to take the mike with you. Would you point out to the jury what you're talking about in terms of subtle scratches?

A Photographs can be deceiving and this is not complete. They can't photograph the entire bottom. But I think in this region, as I interpret that photograph, you see marks that are other than longitudinal. There's a slight slant to them, which would indicate a possible rotation of the vessel about a point in this region.

Q At what frame is that picture taken, can you tell?

A I'd say it's just forward of bulkhead 23,

around 18 or 19.

Q And what you're talking about, so the jury can tell, are these marks right here?

A In here, yes.

Q These very faint marks?

A Right.

Q Okay. There's no damage it looks like to that part of the shell, the bottom plate.

A Well, you can only see them on shell plating. It was...

Q Still in tact.

A ...essentially undamaged.

Q Okay. That's fine. And that's the only photograph, out of the 25 that I showed you, that you see those subtle scratches.

A Well, a photograph set is not complete. It was very little plating that was undamaged that would show, you know, distinctly marks of that type. I saw more in person, viewing the bottom, than I can see from these photographs.

Q Well, it's true, is it not, Professor, that just by seeing scratches, these subtle scratches as you call them, in the toward ship direction, you can't tell what the source of those scratches are, can you?

A You mean rotation?

Q Well, you called them rotating, but you can't tell what caused the vessel to rotate and would result in these scratches themselves.

A No.

Q It could have been tide. It could have been the refloating attempt. It could've been the initial turn of the vessel after she ran aground.

A Could've been.

Q So, there's no way to tell this jury that that rotation was caused by someone using the rudder.

A No.

Q Now, there was no indication, was there, that these subtle scratches caused any further leakage from the vessel, was there?

A The subtle scratches themselves certainly didn't; otherwise, they wouldn't have been subtle scratches.

Q And, certainly, those scratches that you saw didn't effect the strength of the vessel in any way.

A No. The only evidence of a transverse movement.

Q Okay. We spoke a little bit yesterday about the controlling factor for the flow rig, do you

recall?

A Yes.

Q And you mentioned it would be the size of the smallest orifice on deck.

A Yes.

Q And in the case of the oil tanks, the smallest orifice was a four inch pressure vacuum valve.

A Only if deck butterfly slider valves were shut.

Q Okay. If the butterfly valves were open, then it would be a combination of the four inch and 10 inch valves?

A Well, four inch, yes. Ten inch, plus the liquid breaker on the main.

Q In any event, the point that I'm driving at is you could have a hole in the bottom that's a 100 feet wide and 100 feet long, and the flow rate of the oil coming on would still be controlled by the either a four inch or a 10 inch orifice on top.

A Yes.

Q Let's talk about the slider valves for a second. Let me show you what I've marked for identification as Defendant's Exhibit AO, AQ and AP, which are three different pictures of the

same device and ask you: is that the slider valves that you saw on the ship?

A Those are the slider valves.

(0500)

MR. CHALOS: You're Honor, at this time I offer Exhibits AO, AQ and AP into evidence.

MR. COLE: No objection.

THE COURT: They're admitted.

EXHIBIT AO, AP and AQ ADMITTED

Q (Professor Vorus by Mr. Chalos:) Professor, would you hold up the picture that best depicts the operation of the slider valve, and show the jury how the slider valve is opened and closed.

A Shall I get up?

Q If you'd like.

A This is the cargo tank access hatch.

Q That closes, by the way, with this lid here, right?

(590)

A There's a lid that shuts that and locks it so that it's air tight. This is the 12 inch feeder line for IG coming from the 24 inch main. And the 24 inch main runs down the center of main deck.

This is a pipe that comes in to the tank

access hatch, and supplies the inert gas to the tank.

This is a valve that's actuated by this hand wheel that slides back and forth as a plate, and you can see the plate from the other side. The plate has a hole in it. All right. Now, in this position, that valve is closed. And if the plate is roughly rectangular such that when it's in the retracted position this hole is opened to the pipe and allows flow through. That's the normal position.

When the valve is shut, this rectangular plate passes through this slot, slides through that slot, such that the portion of the plate that's solid, then blanks over the 12 inch pipe.

Q And all you have to do is turn this fly wheel to close the valve, is that correct?

A Right. The valve is actuated by this hand wheel.

Q Hand wheel. Okay. That's a fairly simple process, isn't it, to turn the wheel?

A I should think so.

Q Yesterday you drew -- okay. You remember this drawing here where you drew a ridge?

A Yes.

Q And you drew the course of the vessel? What did you base this information on?

A Directly on the soundings that were done on March 24, the day after the grounding -- or, actually, the day of the grounding. As produced by Exxon and used in connection with the salvage operation.

Q You're talking about what we marked as Exhibit AK? Are you talking about these soundings?

A No. That's part of it. This was a package of information I got as a letter from Paoli (ph) to McCall, which instructed the Coast Guard as to the plan for the salvage of the vessel.

Q I don't know if I've seen that letter, but let me ask you this...

MR. COLE: Judge, I object to that.

MR. CHALOS: May we approach the bench?

THE COURT: Yes.

(0740)

(Whispered bench conference as follows:)

MR. COLE: It's about the third time Mr. Chalos told the court we have not provided him with stuff, without any basis (indiscernible - whispering) to the jury (indiscernible - whispering).

MR. CHALOS: (Indiscernible - whispering)

THE COURT: The fact of the matter is, you haven't been saying that I haven't seen that yet, things like that. That's not a questions; that's a statement. You should ask questions, Mr. Chalos. And the next time you do it, I'm going to admonish you in front of the jury.

MR. COLE: I've been waiting for something to occur on this.

THE COURT: You don't need to do those things. Just ask questions.

(End of whispered bench conference)

(0500)

Q (Dr. Vorus by Mr. Chalos:) Professor, with respect to the information relating to the course, where did you obtain that?

A I just told you.

Q From that document that you just referred to?

A Yes.

Q This ridge that you drew in, do you recall what the soundings were for this ridge?

A It's around six fathoms.

Q Right at this point?

A Between six and eight. That ridge is also identifiable approximately from the chart of the sound.

Q Well, that's what I wanted to ask you about. Did you do any calculations with respect to the speed and the position of the vessel at any particular time; let's say, from midnight until the time of the grounding.

A No.

Q Did you take the course speed and position of the vessel and overlay it on the chart?

A I've seen that -- seen the overlay. There was an overlay done by -- in the CAORS simulation.

Q The CAORS report from Kings Point.

A Yes.

Q And you've looked at that and come to the conclusions that you came to here.

A Well, I used specifically the soundings in connection with salvage it would take in the day of the accident. But I think that's consistent with the chart of the reef and the course line that was dictated by the CAORS simulation.

Q But you didn't actually plot it on the chart to see if your theory holds up.

A I think if you look at the chart and the CAORS simulation, you'll see that this is essentially what they show.

Q Now, is it your testimony that the striking of

the reef as you've drawn it was about the time that the vessel was on heading 245 or 250?

A 247.

Q And that's because you see sort of a hitch in the course recorder?

A I think it's consistent. I can't say definitely that the two are correlated, but that has been attributed. That's one explanation of that slight course change, was that that was the first contact with the bottom on 247.

Q Well, you'll agree, then, that there could be other explanations, besides the fact that the vessel might have hit at that point?

A I haven't seen any of it. I don't know what another logical explanation would be, but it's not been proved that that's the case.

Q How about the helmsman putting on some counter rudder at that point?

A Anything is possible.

Q Let me give you a hypothetical. If the vessel, at the time that this hitch appeared in the course recorder, in water that was about -- anywhere between 180 feet and 240 feet, would you agree that that wouldn't be indicative of a vessel striking the bottom?

A Yes.

Q You would agree.

A It is in very deep water, then the course change certainly would not be indicative of the vessel striking the bottom.

Q Let me show you what we've marked as identification as Exhibit AN, which is a sounding chart for Bligh Reef. And ask you, would you look at this sounding chart?

A No, I've never seen it before.

Q And I take it you didn't plot any of the vessels courses or speed on a chart of this type?

A I've never seen this chart.

Q Before I move on to another subject, let me show you what's been marked for identification as Exhibit AR. Have you seen this drawing before?

A Yes.

Q It represents a schematic of the pressure vacuum valves on this vessel, does it not?

A Yes.

Q Have you looked at this document in your deliberation?

A Yes.

MR. CHALOS: Your Honor, I offer Exhibit AR into evidence at this time.

MR. COLE: No objection.

THE COURT: Admitted.

Q (Dr. Vorus by Mr. Chalos:) Professor Vorus, without getting up, would you point to the jury where the top of this valve is that would lift in the event that the pressure was exceeded? Let's hold it up, so you can see.

A Yes, I was looking at it. The extreme south, it looks like a bullet point connected to a shaft, which goes down to a disk which seats about mid-valve. At high pressure -- this responds to a high pressure from either the four or the 10 inch line, which lifts the disk off the seat -- it lifts this bullet and the air escapes around the bullet in the top as it opens.

Q At what pressure would the valve lift up?

A Plus 2.75 psi.

Q That's pounds per square inch?

A Yes.

Q So long as the pressure is below 2.75 psi, the valve stays shut, does it not?

A Yes. Well, no. If it's below minus one gauge, then the vacuum element is open.

Q Well, I'm talking only in the relief sense.

A Yes.

Q 2.75, it stays shut?
A I think 2.75, I believe, is the upper setting on both the 4 and the 10.
Q Have you done any calculations, professor, as to what pressure was used in the tanks to refloat this vessel?
A Same documents that specify that pressure?
Q Do you recall what that pressure was?
A I was not to exceed 5 psi.
Q Do you know what the actual pressure was in the tanks when the vessel was refloated?

MR. COLE: Objection. Relevance.

MR. CHALOS: Your Honor, this goes to his calculations -- the calculations that he did for the vessel would have capsized or sank after it came off the reef.

THE COURT: Was that contained in the information provided to you?

A The Exxon Salvage Plan specified those.
Q (Dr. Vorus by Mr Chalos:) Do you know what the actual pressure was in the tanks when the vessel was refloated?
A I know that the plan specified that they not exceed 5 psi. And to use pressure needed to achieve the ship attitude.

Q But you didn't do any calculations that would have indicated what kind of pressure was in the tanks when the vessel was refloated?

A I didn't deal with the refloating issue. I do know, however, that these valves were blank.

Q At the time of refloating?

A Yes.

Q Now, let's talk a little bit about your calculations. I believe you testified that all your calculations were made on the computer?

A Yes.

Q And this was a program that you've written?

A That we wrote specifically for this job.

Q And the figures you obtained, both in terms of flow rates and in terms of the vessel's stability after she came off the reef, were all run through this computer and through this program, were they not?

A Yes.

Q How long did it take you to run the various scenarios that you spoke about yesterday?

A Do you mean computer time or real time?

Q Well, the time from putting in the information, letting it run through the computer and then getting back the results?

A I think the execution time on our IBM mainframe was 10 second -- we ran in 30 second intervals.

Q No. What I'm talking about is, you have to gather certain information. You had to input it into the computer. The computer had to do whatever it did on the basis of the program that you had, and then it would give you some results, right?

A Yes.

Q How long did that...

A That's a very hard question to answer. We developed this program and we assembled information as we went along. I mean, the initial input was developed early. It was refined, as we looked at it and started the problem. I can't give you an answer there.

Q Well, would you say that the process that you just described took well over nine months?

A No.

Q I'm talking about gathering information, refining it, tailoring it, doing whatever you had to do.

A We didn't have the information until the middle of January.

Q And when did you write up your report?

A I haven't written a report.

Q Is there a particular reason why you haven't written a report?

A I've written some brief memoranda indicating the bottom line of our findings. There's been no report written, because we are still developing these results at a rather late stage.

Q Is it your usual practice to prepare a report when you are asked for your expert advice?

MR. COLE: Judge, I object. May we approach the bench?

THE COURT: No. Objection is sustained as to relevance.

(1235)

Q Professor, you wouldn't expect a captain who has just run aground with a ship spewing oil, to be able to take the information that you gathered over a period of time and ran it through your computer and do the calculations that you did in his head, would you?

A Well, that's a question very much like the one you asked me, as to whether or not I thought about center of buoyancy and center of gravity when I ran my sailboat aground. I'm familiar

with those things, and, yeah, I mean, that kind of information goes through ones head. I think if you are familiar with the considerations involved, you go through quick computational processes like that.

Q But the information that you spoke about, the detailed information as to flow rates, as to stability. Those aren't the kind of things that one could run through his head in a moment of grounding and not come up with specific numbers?

A Not to do precise calculations, but -- I mean, that's all we're doing here with this kind of analysis is, we're using it to help us make judgments. I mean, engineering is a science of successful approximations, and that's all this is being used for.

Q Well, you are using it to make judgments after the fact, isn't that right?

A I'm using it after the fact to make judgments, yes.

Q In other words, you were given a task, and the task you were given was, if this vessel came off the reef in the worst scenario, tell us what would happen?

A That was the analysis that I've done, yes.

Q And the analysis that you did was limited to certain scenarios -- five scenarios I think you said.

A Well, I did enough that I felt that I was able to make some rather broad judgments about what the consequences of that extraction from the reef would be. You can't run every case, just like you can't process every case mentally. But I think I did enough so that the conclusions are generally valid.

Q Valid for those particular scenarios that you ran?

A Well, those particular scenarios showed me enough to allow me to make some generalizations beyond those specific cases.

Q And would you call your conclusions generalizations at this point?

A They are generalizations with some constraints.

Q We'll get into that. Let me ask you this: I notice in your calculations that you use a draft of 56 feet coming off the reef?

A Yes.

Q The evidence in this case is that the draft at the time of the grounding -- shortly after the

grounding, was 50 feet?

A What evidence?

MR. COLE: Objection, Your Honor. That's not what the evidence is.

MR. CHALOS: It certainly is, Mr. Cole.

MR. COLE: That's what Mr. Kunkel put in as an estimate, and that's all it was.

MR. CHALOS: All right. Let me rephrase the question.

Q (Dr. Vorus by Mr. Chalos:) Have you done any calculations using the estimate of 50 feet as a draft?

A No. The evidence was contradictory. Mr. Kunkel's testimony said the vessel was at even keel. Which means it had no list. Obviously, it's grounded on the starboard side. If the starboard side is at 50 feet, the vessel is not at even trim. And I just didn't feel that there was consistent input available to assume a departure attitude. Draft, heal and trim was conservative from the standpoint of predicting whether or not the ship would survive.

Q Well, if the draft was less than 56 feet, how would that affect your results?

A The oil would flow out faster. Such that,

when it came off it would sink quicker.

Q But you didn't do any calculations to prove that?

A That's the generalization I'm talking about.

Q Now, in doing your flow rates, did you consider the check valve in the IG system is a non-return check valve in the IG system?

A You mean the deck seal?

Q No, I'm talking about the non-return check valve.

A I'm not sure. We may be having trouble with semantics here. There's a shut-off valve in the engine room.

Q No, I'm not talking about that.

A There's the deck seal.

Q Did you consider that?

A The deck seal is assumed to allow no flow in either direction.

Q In your calculations?

A Yes.

Q I notice that in your calculations you assume that all of the tanks -- the tank walls, the bulkheads -- remained in tact, is that correct?

A Yes.

Q You know from the evidence here that there was

-- and from what you saw down in San Diego, that there was damage to the bulkheads themselves, was there not?

A Yes.

Q And in the situation of the ballast tanks on the starboard side, you had a mixture of oil and water at the time of the grounding, did you not?

A Excuse me. Repeat the question.

Q In other words, when the bulkheads were damaged, oil and water got into the ballast tanks from the number two center tank?

A Yes.

Q Did you consider that in your calculation?

A No, I did not.

Q Is there a particular reason why not?

A It's very hard to quantify. It's hard to believe that there was much oil floating on top of the water in the ballast tanks, because it was the lower extremity of the bulkheads that were damaged -- initially you get some oil flow into the tank, but the tank bottom is also open, so water is entering at the same time. And at some point the flow of oil into the tank will be blocked by the level of water in the tank.

Q But the fact of the matter is, you didn't do

any calculations to see how that would affect your stability calculations?

A My judgement was, this analysis is not exact. My judgment was that it's not a very important factor.

Q Now, have you done any calculations to determine how much of the ship was resting at the bottom after the grounding?

A No.

Q Have you done any calculations to show the tons aground after the grounding?

A No.

Q In your scenarios -- the four or five scenarios that you spoke about, the vessel has come off the reef at various intervals?

A Yes.

Q How did the vessel come off the reef?

A I haven't addressed how it came off. It was assumed to -- at time zero, at the initial instant, it was freed from the reef, period, and allowed to free-float.

Q You've spoken with Mr. Milwee, and I take it you studied some of the information that he supplied there?

A Yes.

Q Do you agree with his assessment that it was impossible for this vessel to come off in the condition that she was in? That is, impaled on a rock?

A Well, obviously it didn't. It didn't come off. And I think that's as good a proof as any that it wouldn't come off.

Q You agreed, from the damage that you saw in San Diego, that this vessel was impaled on the reef?

A It was in the claws of the rocks, there's no question about that.

Q Now, your calculations, therefore -- your scenarios are just shear speculation, are they not, if the vessel couldn't come off the reef?

A Yeah, but you know, again, referring to the soundings, it looks like if the turn had been a little less gradual, for example, the momentum might not have been dissipated as quickly. It might have hung up a little closer to the stand, and it very well might have come off.

Q Okay. But that's speculation as well because we know that she was impaled and she didn't come off.

A She didn't come off.

Q Let's take a first scenario. You say this vessel came off at 10 minutes after the grounding, is that correct?

A Well, the first scenario was that it holed, but never grounded.

Q In other words, she holed and she went right over the reef and kept going?

A The momentum carried her over the second reef just like it did the first one.

Q Well, of course, that didn't happen in this case?

A What didn't happen.

Q The ship didn't hit and continue on?

A No, it didn't.

Q It didn't?

A Did not.

Q Let's take your second scenario. She came off the reef 10 minutes after the grounding?

A Five minutes.

Q Oh, five minutes. Okay. Assume for the moment that the vessel grounded at 12:10. That would have been at 12:15?

A Yes.

Q 12:15 in the morning. Well, that didn't happen?

A No.
Q Okay. Let's take your third scenario. That was, what? Ten minutes after the grounding?
A Yes.
Q If the grounding occurred at 12:10, that would be at 12:20, right?
A Yes.
Q That didn't happen either?
A No.
Q What is your third scenario or fourth scenario?
A Fifteen.
Q That would be 12:25 by my calculations?
A Yes.
Q That didn't happen either?
A No.
Q And what was your fourth one or fifth one?
A Well, at that point I stood back and looked at it and it was obvious that, to go on with this, we're not learning anything new, because adding the time from floating to sinking to the time on the reef, those times were getting less and less. And, in fact, the longer it stayed on the reef before refloating, the quicker it sank. And it was obvious that that trend would continue.

Q Okay. But, of course, that didn't happen either? In other words, it didn't come off at some later time. An hour, or two, or three hours later?

A No, it did not.

Q Now, the scenarios that you spoke about, the four or five scenarios, they make certain assumptions, do they not, once the vessel comes off the reef?

A Well, I mean, any analysis of that type makes assumptions.

Q Well, but I want to get into the assumption. The major assumption that you make is, the vessel comes off the reef and no further action is taken by the crew to go in, is that right?

A Well, there was a parallel set of scenarios at the same times with the slider valves assumed to be shut immediately upon extraction.

Q Let me ask you about that. You said that you did some calculations for that scenario?

A Yes.

Q And that scenario indicated that if they shut the IG valves at the same time that they came off, the vessel would have stayed afloat?

A For starting times of zero, no grounding, five

minutes for the first two. It indicated that the vessel would reach equilibrium. That all the flow interchanges would stop and it would still be floating.

Q Now, you didn't make any drawings or present us with any calculations in that regard, did you, for that scenario?

A You have the results of those calculations.

Q The one where the vessel floats?

A Yes, with the slider valves closed.

Q You didn't make any drawings in that respect, did you, showing the vessel floating?

A No.

Q Did you, as part of your scenario, consider the possibility -- let me take that back and ask you -- in your scenario, as I see it, the vessel comes off the reef and starts to get heavy on the starboard side?

A Yes.

Q Because the oil is coming out and the water is coming in. Ultimately she starts to roll to the starboard side and she takes on more water on that side. And as she rolls a little bit further, she takes on additional water, and finally she capsizes.

A Well, this trend is trending down by the valves.

Q By the head and then flipping over.

A That's correct.

Q That's your scenario, right?

A Well, that's my result. That's my prediction.

Q And it's also your four scenarios?

A Yeah. In all four cases the basic mode is what we predict.

Q Did you, when you were doing these calculations -- did you make any calculation for the possibility that the vessel's crew would ballast down the starboard side before the vessel started to go to starboard?

A Ballast the starboard side?

Q The port side, right.

(1978)

A Well, I thought of that and I just can't imagine that one would take on more water in that circumstance. It's the water that's going to sink the ship ultimately, and it seems that that would be a last resort, to start opening sea valves on the port side to try to balance the heel.

Q Well, how about in conjunction with some other

action, for instance? Like, closing the IG valves, getting buoyancy and then balancing down -- prevent the vessel from going to starboard. Did you consider that?

A Well, I considered it.

Q But you didn't do any calculations?

A There was very little time -- I think that the first 30 minutes, it's not obvious that there is even a problem. There's a subtle roll back from port to starboard. I don't see anybody getting too alarmed. But it's like felling a tree. It's like a lumberjack cutting down a tree. It starts very slowly and then accelerates. And I think after 30 minutes people got to worry about things other than what they are going to do to save the ship.

Q That's all very well...

A There's no time -- there's really very little time here.

Q Well, the fact of the matter is, the answer to my question is, you didn't do any calculations?

A Well, I did some of these mental calculations you keep referring to.

Q But you didn't run them through your computed to see if the vessel would stabilize and stay

afloat?

A No.

Q I take it, then, you also didn't consider the possibility of control flooding the number four starboard?

A By air?

Q Water? Air? Did you consider air?

A Control -- I don't understand your question.

Q Well, that's because you confused it. Did you consider controlling the water coming into number four starboard by using the vessel's pumps?

A No.

Q Did you consider the possibility that the crew may have pumped air into the number two starboard or into the number four starboard?

A I don't think -- I mean, they did that in salvage. But you've got to blank the vents. There is no way to shut the vents off.

Q You mean the PV valves?

A No, I mean the vents in the ballast tanks. I think you are referring to the number two ballast tank.

Q Right. How big are the vents of the number two ballast?

A There is one four inch and one six inch vent.

And when they salvaged the ship -- I mean, they refloated the ship largely by pumping up the forepeak and the ballast tanks with air, but their was some amount of time required to prepare the ship to do that. I think a matter of days to build blanks for all those vents to make them airtight.

Q How about just taking a piece of wood and taping it down in a hurry? How about just stuffing a shoe in there? How about somebody's coat? Did you ever consider that?

A I believe the pressure is -- I don't believe you could airtight those vents that way.

Q But you didn't do any calculations to figure out whether you could?

A Well, I just don't see that as a viable possibility.

Q And you didn't consider this being a viable possibility?

A I'm not going to do calculations on things that I think are unreasonable. I don't have enough time for that.

Q It's true, is it not, that the scenarios that you took were specifically designed to show the ship capsizing in all modes?

A No, it is not.
Q The one that you say about the IG valves being closed?
A I would like to take a minute here. I really object.
Q No, no. You have to answer the question.
A I did not contrive the calculations to show that the ship would sink.
Q But you didn't do any other calculations, such as ballast calculations. You didn't do any calculations where air may have been pumped in?
A There is no indication the crew is doing anything of the type that you indicated.
Q And there is also no indication that the vessel was coming off the reef either, but yet you did the calculations.
A And slightly different conditions of that grounding, the vessel could have come off under those actions. There were no steps that I could see that were being taken to do any of the things that you refer to.
Q Well, of course you weren't there, so you don't know what was in people's minds?
A I've read the testimony.
Q Well, since your situation is a hypothetical,

sheer speculation, I would like to now, if you will, take this hypothetical. Suppose the crew did ballast down. Would that affect the rate at which the ship capsized or didn't capsize?

A It will affect the capsizing situation. You are very likely, then, just going to flounder the ship. You know, it doesn't capsize, it simply sinks by having too much water aboard.

Q But you didn't do any calculations for that either?

A No.

Q Sir, did you consider the possibility that if the vessel came off and the crew saw that it was starting to become a dangerous situation, that they would run right back on to the reef?

A The situation that I considered was the ship coming off the reef, as she was resting on the reef, and evaluating what would have happened in time.

Q But, again, with no particular idea in mind how the vessel would have come off, or the fact that she might not have come off at all. In fact, wouldn't have come off, according to the testimony?

A That's -- I explained the case...

Q Let's talk about the strength calculations. You've done some strength calculations?

A Yes.

Q And you found the vessel to be sufficiently strong as you came off the reef, right?

A I found that the stresses were not excessive. We evaluated stresses at each of these time steps a half a minute apart. And the danger was in capsizing and sinking and not breaking up.

Q Okay. Now, did you do any calculations as to the vessel's strength at the first low tide?

A We had to calculate the section degradation -- the section of the beam that bends. That section is degraded by the damage. We had to do that calculation to use later in the stresses. It was consistent with calculations made by others in connection with the salvage operation.

Q And at the time of the first low tide, you found the ship to have sufficient strength to withstand breaking?

A Yes, because of the midships section crushed, therefore relieving the bending.

Q It's true, is it not, that there was nothing done after the grounding that in any way appreciably affected the strength of this vessel?

A Well, I think the movements on the reef, displaying of the longitudinals, that quantified it. That certainly do the strength any good, and I think, in fact, for the degrader.

Q But you didn't do any calculation to find out if it affected it in one way or the other, the overall strength?

A I think the affect of that is in the...

Q The answer is either, yes, or, no. Did you do any calculations?

A Yes.

Q You did calculations?

A I did calculations of the degradation and section of the beam after the grounding. Included in there were any rotational motions which further reduced the effectiveness of the longitudinals.

Q And, again, the rotational motion, you can't say whether it was from the vessel turning after the initial grounding, or from the vessel resting down on the rock, or anything thing?

A We know that the vessel was rotated. I don't know, there may have been other rotations occurring for different reasons. I'm not aware of any others.

Q Now, it's true, is it not, if the vessel -- the fact that the vessel didn't come off the reef -- let me withdraw that.

MR. COLE: Your Honor, before I get started, I'm going to move for the admission of plaintiff's Exhibit 159.

MR. CHALOS: No objection.

THE COURT: Pardon me?

MR. CHALOS: No objection, Your Honor.

THE COURT: 159 is admitted.

EXHIBIT 159 ADMITTED

MR. COLE: 168.

MR. CHALOS: No objection.

THE COURT: 168 is admitted.

EXHIBIT 168 ADMITTED.

MR. COLE: 166.

MR. CHALOS: No objection.

THE COURT: 166 is admitted.

EXHIBIT 166 ADMITTED

MR. COLE: 165.

MR. CHALOS: No objection.

THE COURT: It's admitted.

EXHIBIT 165 ADMITTED

MR. COLE: 167.

MR. CHALOS: No objection.

THE COURT: It's admitted.

EXHIBIT 167 ADMITTED

MR. COLE: 169 through 173.

MR. CHALOS: I object.

Your Honor, those are scenarios that didn't occur in this situation. They are all hypothetical, shear speculation, and I think that given the evidence in this case, that this vessel would not have come off the reef. They will only confuse the jury.

THE COURT: Counsel approach.

(2357)

(Whispered bench conference as follows:)

THE COURT: (Indiscernible - whispering).

(2365)

THE COURT: Court reserves ruling on the last exhibits. We'll take that up at a later time.

REDIRECT EXAMINATION OF DR. VORUS

BY MR. COLE:

Q Mr. Chalos showed you what has been identified as defendant's Exhibit AR. And that was a PV valve, is that correct?

A Yes.

Q That's on the Exxon Valdez.

And where would that have been located on the deck of the Exxon Valdez?

A Well, the small -- on a four inch valve located on a line on each one of the cargo access hatches, and then there are two larger ones -- those are four inches. There are two 10 inch sizes, covers two and half to 10 inches. It's the same valve and different sizes. But there are two located on 10 inch lines off the 24 inch main.

Q Now, Mr. Chalos talked to you about one of the purposes, which is to lift. What is the other purpose of these valves?

A The other purpose is to respond to vacuum. To similarly lift if the pressure falls below one -- if the tanks access hatches is minus one pound per square inch vacuum. And on the main, I believe it's minus one-half pound per square inch vacuum.

Q So when a vacuum is created within the tank below the minus one, which could be caused by oil rushing out, that automatically opens to allow air to come in there, is that correct?

A Yes.

Q How do you shut that off to stop that from happening?

A There's no shut off mechanism on this valve.

That's because this valve is considered to be protection for the system and they want it to be fail safe. There's no shut off.

Q So you can't go up there, like on the slider valves, and just turn a wheel?

A No.

Q Now, Mr. Chalos asked you about the slider valves. These are valves that are over the ballast tank, is that correct?

A No. They are over the cargo tanks.

Q And where are they located?

A They are indicated by this little "x" figure in the feeder lines off the main, going to each of the cargo tanks.

Q And if you wanted to close all the slider valves, under your scenario, where the vessel floated, would you have to close every one of these tanks?

A The number four -- please repeat the question.

Q When you ran your scenario where the vessel refloated, were all the slider valves closed?

A And that would have had to occur either at the time of the grounding or within 10 minutes of the grounding?

A The assumption was that the valves were open

during the time that the ship was on the reef, and at the time that they came off they were all closed.

Q Mr. Chalos asked you about what results you were asked to reach in this case. Were you asked to reach any particular results?

A Nah. I object to the accusations being put forward here.

MR. CHALOS: Your Honor, I move to strike. That's not responsive. The witness is making a speech here.

THE COURT: Is there anything other than the non-responsiveness that's objectionable?

MR. CHALOS: Yes, Your Honor. I think the speech that he's making is prejudicial. He was asked whether he had been asked by the D.A. to reach a certain opinion. He said, no. And then he wants to expound on it.

THE COURT: Well, unless there is a substantive objection you can make. Non-responsiveness is an objection only that the person making the inquiring could make, since there is no real objection to it, the objection is overruled.

You may continue.

A I think the state conducted itself most

properly in this case -- in my case. I can't speak for the other experts. But Mr. Adams was...

THE COURT: Excuse me just a second. Will counsel approach the bench, please. Excuse me for the interruption.

(2785)

(Whispered bench conference as follows:)

THE COURT: We're not going to get into this, whether the state acted improperly (indiscernible - whispering). And let's make it clear. Now, when you say "I object. It's non-responsive." That's not a real objection. That's Mr. Cole's objection. He could control his witness. Now, if you have a real objection such as relevance or hearsay, I would otherwise sustain the objection.

But where he's at now, what he thinks the state's actions are not relevant. I'm not going to -- I'm going to take some control under this circumstance and not let the jury hear that.

(End of whispered bench conference)

(2815)

Q (Dr. Vorus by Mr. Cole:) When you were asked to do this project, did you know at that time whether this vessel would have floated upon --

would have capsized or reach equilibrium upon refloating?

A I did not, and I told you that.

Q One of the results that you ran is that the vessel never became ground but just sustained the damage that it did, is that correct?

A Yes.

Q And what was the results?

A That it had capsized.

Q Within what time, do you remember?

A I believe it was 85 minutes.

Q Now, you used the word "splaying" in discussing how the longitudinals running down the length of the vessel looked to you. What do you mean by "splaying"?

A A distortion across the ship -- crossways.

Q Could you use those diagrams to demonstrate to the jury what you're talking about? You could step forward if you like. Before you do that, you're referring to plaintiff's Exhibit 145, is that correct?

A You're looking at the bottom, so the bottom is here. You see that these longitudinals are bent across the vessel, which would come from forces applied across the bottom, which could be due to

the rough contour of the reef rocks catching on the lower -- the edges of the longitudinals as the ship moves transversely due to rotation.

Q Now, you said that you observed crushing damage in the area of bulkhead 23, is that right?

A Yes.

Q Could you reconstruct what damage had occurred to that area before the crushing during the tides?

A During the low tide?

Q Before the low tide. Is it possible to reconstruct what damage occurred before the first low tide?

A No.

Q And why is that?

A The damage pattern that existed before the tide went out was obliterated by the crushing of the structure in that area.

Q Does that mean that there was not damage done by that twisting motion?

MR. CHALOS: Objection, Your Honor. This is sheer speculation, and leading, as well.

THE COURT: How could this witness answer that when he said there is no way to tell?

MR. COLE: He said that there's no evidence,

but he could testify as to what his opinion is as to what damage would have occurred from this.

THE COURT: Objection sustained.

Q Did you have any conversations with anyone about the slider valves being open or closed at this time, when the vessel became grounded?

A Yes.

Q Who was that with?

A It was with both Mr. Lites and Mr. Kunkel.

Q And do you know when the slider valves were closed?

A No. I know they were not closed at the time of the grounding.

Q Mr. Chalos asked you a question about whether or not a captain would know the information that you calculated from your computer. Would you just briefly describe for the jury, what causes this vessel that's like this -- how do the ballast tanks and the ballasts of this vessel keep it afloat?

A Well...

Q Where are the valve sections in this thing?

A The ballast tanks, those with the paper on top. This is he bow, so this is the number two

tanks. The center region is oil, but the two outside tanks are ballast, and they were dry at departure. The forepeak was also dry, which is up in the extreme bow. The number four tanks are also ballast tanks on the outside. They were dry at departure. Otherwise, the tanks were collectively about 85% full of oil.

Q Is the engine room a ballast section on this vessel?

A Yeah, the engine room is also ballast, after the bulkhead on the number five tank. That's buoyance -- the forepeak is buoyant. Generally the mid region of the vessel is not buoyant, butt he ballast tanks spaced at these intervals provide buoyancy to help support the load -- the cargo load throughout the mid body.

Q And if a vessel was traveling at about 11.25 or 45, or 75 knots and it struck a reef head-on, and the captain was told that he had water in his forepeak, and his starboard tanks -- starboard valves number two and number four show water or some fluid coming in. What would that tell him about how much buoyancy he had left?

MR. CHALOS: Objection, Your Honor. I'm going to object on foundation. Without more facts, I don't

think this witness can answer that. And, secondly, this man is not a captain. How could he speculate what a captain would know, with that information.

THE COURT: You've gone beyond the scope of this witness' expertise with that question. Objection sustained.

Q If you were told that amount of information, how much -- how many other tanks support -- would be in tact to support this vessel stabilitywise?

MR. CHALOS: Objection, again, Your Honor. No foundation.

THE COURT: Objection overruled.

A The number two and number four ballast tanks on the port side, in this scenario, would still be buoyant, as well as with the engine room -- from the forward engine room bulkhead to the stern.

Q Does the fact that oil may have mixed with the water that was coming in to the ballast tanks on the starboard side, two and four, change your conclusions that you have reached in this case?

A As I explained, I don't think it was very much oil, considering the physics of the processes that were occurring, and it had no significant affect on my conclusion.

Q And as in Mr. Chalos' hypothetical, you ballast down the port sides. What happens to the vessel then?

A Well, water on the port side would -- we're approaching a situation of this type of attitude, with a bow slightly down. But it's taking a very extreme heel angles. Pumping water -- opening the sea valves on the port side would tend to reduce the heel angle. But adding water forward would tend to increase the trim down in the bow, and increase the displacement of the vessel. So that if the danger of capsizing is reduced, the danger of foundering, which is just sinking, down by the bow is increase.

Q I have nothing further. Thank you.

RECROSS EXAMINATION OF DR. VORUS

BY MR. CHALOS:

Q Just a few questions, professor.

Again, all your hypotheticals omit any action by the crew whatsoever, is that correct? Except the one where the valves close?

A Yes.

Q And, again, you didn't do any calculations with respect to the ballasting down partially, or fully, on the port side?

A I started to, but I just didn't see that that was -- I couldn't get excited about it. I didn't think it could do anything for me.

Q It wasn't because, if you did the calculations, you found that the vessel stayed afloat, was it?

A I've already tried to explain that.

Q Now, in your scenarios again, you didn't consider the possibility of the crew pumping out the number four and the number two starboard tanks -- ballast tanks, did you?

A No.

Q Is there any particular reason why you didn't do that calculation?

A I think the rate at which the crew would have had to act at the time and the rate at which water was coming in, he wouldn't have had time to do any good.

Q How about just in the hypothetical, that the crew acted quickly and did what they had to do to pump it out. Did you run that kind of calculation?

A There are other scenarios that could be run.

Q Yes. But you didn't run those?

A No.

Q Now, you talk about the splaying, which you said could have been caused by the vessel coming over a ridge, or rock. You took the splaying of the various longitudinals into consideration when you did the strength calculations?

A Yes.

Q And the vessel was strong enough. That wasn't a problem. The strength wasn't the problem?

A It was strong enough after -- in the scenarios that we ran, in calm water, free floating. Again, it has sits buoyancy back. Things are uniformly distributed, yes. That even with that degraded section it still had adequate strength.

Q And that includes that section around -- section 23?

A Yes.

Q So that's sufficient strength?

A For that case. Calm water, ungrounded.

Q Well, that's what you had in that area; calm water, right?

A Yes.

Q No further questions.

REDIRECT EXAMINATION OF DR. VORUS

BY MR. COLE:

Q Is that what you would have when you lost,

say, 12 feet tide at the next low tide?

MR. CHALOS: Objection, Your Honor, to the form of the question. Is that what you would have with calm water, do you mean?

Q Is that the calm water scenario, the same as having a 12 foot drop in tide and being set on a pinnacle.

A It's a different loading, but it has some similarities, in that, as we explained yesterday, the effective ways, is to change the support of the vessel. To change its buoyancy distribution, and that's what a hard grounding is also doing. It's concentrating the support locally.

Q And in your scenario that you ran, at some point, let's say -- let's take the 10 minute one. At some point, before the vessel capsized, is it because the angle of the vessel is -- when does it become unmanageable? I mean, where you can't walk on it.

A Well, you've gotten to 20 degrees after 30 minutes after the -- it's been removed from ground. I think at that far at the decks would become almost impossible to work on.

MR. COLE: I have nothing further.f

THE COURT: You're excused.

(Witness excused)

THE COURT: We'll take a recess, ladies and gentlemen, for about 10 or 15 minutes. Don't discuss the case among yourselves or with any other persons. Don't form or express any opinions.

THE CLERK: Please rise. This court stands in recess subject to call.

(Off record - 10:05 a.m.)

(On record - 10:20 a.m.)

THE COURT: Call your next witness, Mr. Cole.

MS. HENRY: The state will call Captain Stogsdill.

(Oath administered)

A Yes.

JAMES STOGSDILL

called as a witness in behalf of the plaintiff, being first duly sworn upon oath, testified as follows:

THE CLERK: Would you please state your full name and spell your last name?

A James Stogsdill, S-T-O-G-S-D-I-L-L.

THE CLERK: Your correct business mailing address?

A 325 Kalifonski Beach Road, Soldotna.

THE CLERK: And your occupation?

A Alaska State Trooper.

DIRECT EXAMINATION OF TROOPER STOGSDILL

BY MS. HENRY:

Q Sir, how long have you been a member of the Alaska State Troopers?

A Eighteen years about.

Q And during that period of time, were you ever assigned to what's been called the CIB unit?

A Criminal Investigation Bureau, yes.

Q How long were you assigned to that unit?

A From 1981 until 1984, I think.

Q What happened in 1984?

A It was generally disbanded and the investigators were spread apart.

Q When it originally was a unit prior to 1984, where were you assigned?

A Homicide.

Q And was that assignment in Anchorage?

A Yes.

Q But the homicide unit was to cover the entire state, is that correct?

A Yes, it was.

Q Once the unit disbanded, the investigators were sent to different areas of the state?

A Correct.

Q And where were you sent?

A Soldotna.
Q And that's where you have been ever since?
A Right.
Q Are you still an investigator for the State Troopers?
A Yes.
Q How did you become involved in the investigation of the grounding of the Exxon Valdez?
A Actually, I think it was a month or so after the grounding. I think I had spoken to you on the phone about another matter, and at that time they needed another investigator to work on the case, and I became involved at that point.
Q Now, do you know approximately when that would have been that you started becoming involved in this case?
A It would have been the end of April -- 20, 21st, somewhere in there.
Q Of last year?
A '89.
Q And you've been involved in the investigation ever since, is that correct?
A Yes, ma'am.
Q Now, there's been some testimony by Professor

Vorus that he did not get certain information that he needed until mid-January of this year, and therefore could not run all the tests that he was requested to do. Do you know why that was?

MR. MADSON: Your Honor, I'll object. I don't see the relevancy in why he did it in January as opposed to some earlier date. He did it and he testified about it.

THE COURT: Objection overruled.

Q Do you know why that was, sir?

A Well, basically, pending the outcome of some legal issues there were a number of documents and statements and tapes and those kinds of things that were withheld in the prosecution in this case, including myself.

And I think that those issues weren't resolved, then, until -- well, sometime pre-January, but all those documents, as a matter of course, were made available to us in, I think, January 19 or 20, somewhere in there. And then from that point on, then, what was made available was sent on to the experts who needed it, that sort of thing.

Q Is that the same reason that Mr. Milwee also did not receive the bulk of the reports until

approximately six weeks ago?

A Yeah. Nobody could get it until we had it to give to them.

Q There has also been an exhibit that was introduced in this case, an oil spill report that Mr. Chalos pointed out, had a portion blocked out. What was the reason for that?

MR. MADSON: Excuse me. Could we find out what we're talking about here? Is it an exhibit, or what?

MS. HENRY: It's the oil spill report, Your Honor.

THE COURT: Do you have an exhibit number to identify it?

MS. HENRY: Your Honor, I believe it's Exhibit 104, the Oil Record Book.

THE COURT: What's it entitled?

MS. HENRY: Oil Record Book.

(Tape: C-3655)

(000)

THE COURT: All right. Exhibit 105 [sic]? When you find that, Mr. Cole, let Mr. Madson look at it.

MS. HENRY: I'm sorry, Mr. Cole, it's Exhibit 85.

THE COURT: Did you get that, Mr. Cole?

MR. COLE: I have 105.

THE COURT: No, it's 85. She just corrected it. (Pause) My records reflect that both 85 and 105 have been admitted.

MR. MADSON: That's correct, Your Honor. I guess I'm just wondering why there are two of the same thing.

THE COURT: You may proceed.

Q (Trooper Stogsdill by Ms. Henry:) Do you know the reason that portions of Exhibit A-5 are blocked out in the Oil Record Book?

A Well, my assumption is, without knowing exactly what is blocked out there, that it's under the same rule as the other documents and tapes and so forth that I mentioned earlier, in that information -- that particular portion of that information was not made available to the state and to the outcome of the legal issues.

Q So in some cases we didn't receive any documents at all on a topic, and in some cases we received documents with portions blocked out?

A Correct.

Q When was the first time we received the interview of Captain Hazelwood by Trooper Fox and

Mark Delozier?

A I think that came with the bulk of the material in mid-January -- the 19th or 20th, I'm not sure. It was somewhere in there.

Q And when was the first time we received the entire Coast Guard tape, the transmissions between the Exxon Valdez and the Coast Guard, the night of the grounding?

A I don't recall the exact date, but that didn't occur until after this trial had begun.

Q Until after the trial began?

A Yes.

Q When was the first time we knew what Greg Cousins was going to say, or had said in the past?

A The first indication we had of Greg Cousins' statements came -- would have been mid-January, then, with the NTSB transcripts. And that was the first time we had gotten those.

Q Sir, were you in town last spring, 1989, the day that Captain Hazelwood made his first court appearance?

A Yes.

Q Did you have any opportunities to talk to Captain Hazelwood that day?

MR. MADSON: Your Honor, I'm going to object tot his, and I think it might take a little more time than we could do just with a bench conference. I apologize, but I think it will take some argument and some voir dire.

THE COURT: All right. I'll accept that representation to rule. We will do this outside the presence of the jury. Don't speculate on what we are doing here. I don't know what we are going to do either. And don't form or express any opinion, or don't discuss the case in any fashion. We will call you back as soon as we can.

(Jury not present)

MR. MADSON: Your Honor, Ms. Henry, yesterday or the day before, told me in a little memo, the essence of what to expect this witness to testify about, and I appreciate that, and that allows me to make my argument, perhaps a little more clear. She expects this witness to answer that, yes, he had a conversation with Captain Hazelwood when he was providing security for him at his initial arraignment. He's an investigator and yet he's assigned as the security in case there was something that happened to Captain Hazelwood.

But, anyway, while he was at the airport,

there was a conversation when just he and Captain Hazelwood were present and his attorneys were not.

One of the attorneys told the investigators not to discuss any of the events that occurred with Captain Hazelwood. We expect that the testimony would show that Trooper Stogsdill did, in fact, ask questions, and fairly innocuous, it may seem, as to who do you know in Valdez. We expect that's what he would testify to, that Captain Hazelwood indicated that there was yet a friend in Valdez.

The first part of the objection goes to the fact that this was a client who was represented by counsel. The investigator had no business talking to him about events that even remotely had anything to do with the grounding of the events afterwards. And at the time, probably Trooper Stogsdill did not think this was even important, but somehow in the course of events the prosecution does. Which leads me to my next objection, which is just plain relevance.

The fact that Captain Hazelwood may say, "I had a friend in Valdez." -- and apparently we don't know who that is, nor does this witness -- what relevance does that have to anything. I just don't see how that is going to aid this jury in determining anything at all with regard to this case and any issues

involved here.

Your Honor, I don't believe the testimony will be that Sergeant Stogsdill was necessarily alone with the defendant. I don't believe he remembers exactly if the attorneys were still there or not. The conversation was simply small talk during breaks and proceedings, and while they are waiting for the plane. It's my understanding that Captain Hazelwood volunteered this. It was not an interrogation or a question fashioned by Sergeant Stogsdill, and therefore it is properly admissible.

As to the relevancy objection, Your Honor, it became relevant during the cross examination of Jamie Delozier in an attempt to impeach her, that, in fact, she did not see Captain Hazelwood at the Pipeline Club drinking with someone else, since the only other person who made claims he was drinking was Mr. Glowacki, who was not in the Pipeline Club at the time. The relevancy of this, Your Honor, is that, in fact, Captain Hazelwood does have a friend in Valdez that he would see when he was in town, and the reasonable inference from that is that that is the person that Jamie Delozier saw with Captain Hazelwood in the Pipeline Club from 1:45 to 2:45, as opposed to Mr. Glowacki.

Ms. Delozier did say that the person did not have an accent. Mr. Glowacki clearly does have an accent, and I think we should be permitted to put this evidence on and argue the inference from it.

MR. MADSON: Your Honor, what will happen if this does come out is the conversation will be somewhat along the lines that Ms. Henry just indicated. However, I think this witness will also acknowledge, and we expect him to, that the conversation was not about a friend that he had in Valdez, but that since the incident all kinds of people were claiming to be his friend, and that a newspaper article, in fact, came out that Captain Hazelwood mentioned, about a guy by the name of Strickland in Valdez. And this article from Long Island indicated that he was apparently interviewed; and he was such a good friend of Captain Hazelwood; he was up at his house all the time visiting, et cetera, et cetera.

So the conversation dealt with a non-existent friend or friend only in the mind of somebody in Valdez.

But even if that weren't the case, we have a non-existent person who may or may not have been in the Pipeline Club at that time. There has been no effort made to make this person's identity known. If there is

an effort, I have no I don't know who it is. I think the witness would simply say, yeah, I tried to find out who it was and I have no idea if the friend really exists, or when this friend, with this conversation, occurred.

Was it a friend five years ago? Has he since moved? It's all sheer speculation. It has absolutely no relevance.

THE COURT: Why don't you go an inquire of the witness now and we'll get a record made of what actually he will say.

MS. HENRY: Thank you, Your Honor.

Q (Trooper Stogsdill by Ms. Henry:) Sir, on the day that Captain Hazelwood arrived in Anchorage to be initially arraigned on the charges, did you have occasion to talk to him during that day?

A Yes. It was May 3, I think. And I was with Captain Hazelwood, generally, the whole day.

Q All right. And that included picking him up at the airport and bringing him to the courthouse?

A Correct.

Q During breaks in the court proceedings?

A I think the court proceeding was quick. The rest of the time I was somewhere in his company.

Q Did it also include transporting him to the jail for the technical booking procedures?

A Yes, it did.

Q And how long did that take?

A A long time.

Q There was some hang-up on the...

A There was some hang-up on the bail posting, or something, and it seemed like we were there a couple hours or something.

Q And did it also include the time going to the airport and waiting for the plane to take off?

A Right.

Q During that time, do you remember specifically what time of the day it was that you had the conversation with Captain Hazelwood?

A No, I don't. We talked the whole day about many things. And somewhere in that period of time, my memory is that he mentioned having a friend. And I think he even told me his first name, but I don't remember what.

Q Pardon?

A I think he even...

THE COURT: Trooper Stogsdill, you are answering questions that haven't been asked yet. The question is, what time of day it was. And I want to

get a foundation here. Who was present? Where, if you can recall, and things of that nature, before we get into the substance of the conversation.

A Okay.

MS. HENRY: Do you want me to continue?

THE COURT: Go ahead. Yes, I would like you to.

Q Do you remember when it was that the specific conversation about his friend occurred, i.e., on the way from the airport? On the way to the airport? During court sometime? During the booking procedure? Do you remember?

A No.

Q You remember it was sometime that day?

A Yes.

Q Do you remember if anyone else was present or in the area?

A I don't recall.

Q All right. Do you remember whether or not his attorneys were present during the booking procedures?

A Mr. Madson was there.

Q Do you remember if his attorneys were present during the transportation to and from the airport

and to the hotel?

A There was -- yes. Mr. Madson, I think, was with us both coming and going.

Q Were there some times when Mr. Madson was not with you or close to you?

A There were times when I was alone with Captain Hazelwood.

Q And this particular conversation that we're talking about, you don't recall if someone was with you or not?

A I don't.

Q Can you tell us how it happened? How the conversation began?

A No.

Q Did you ask him any specific questions?

A No.

Q Do you remember...

A I'm sorry, do you mean about whether or not he had friends in Valdez?

A Yes.

Q No, I don't. I asked him a lot of questions about a lot of things, but I don't recall specifically asking him if he had any friends in Valdez, although I might have. I don't recall how it came out.

Q Why would you ask that question?
A Well, I can't think of a reason why I would have, at the time.
Q Were you trying to make small talk with Captain Hazelwood?
A That's all we were doing all day.
Q What did Captain Hazelwood say about a friend in Valdez?
A My recollection is, is that he had a friend in Valdez who he oftentimes visited and occasionally had dinner with when he was in town.
Q Did he give you any names?
A I seem to recall him giving me the guy's first name, but I don't remember what it is.

MS. HENRY: Your Honor, that's all the questions I have.

THE COURT: It was a guy, is that what you're saying?

A Yes, sir.

THE COURT: Okay. Let me make sure I understand your testimony. You don't recall whether you asked him, or he volunteered this statement, is that correct?

A No, sir, I don't recall.

THE COURT: And you can't tell us now how the

conversation began? What was said before it and what was said after it?

A No.

THE COURT: And you don't recall if there was anybody else present, is that your testimony?

A No. There could have been. I mean, we talked all day, when people were there and when they weren't, and I just don't recall at what period of the day that little piece of information came out.

THE COURT: Besides the attorneys involved, who else was present with you in the presence of Captain Hazelwood?

A Sergeant Stewart, from the Troopers, was with me all day.

THE COURT: All right. I'll hear further argument at this time if there is any need to.

MS. HENRY: No, Your Honor.

MR. MADSON: No, Your Honor. I don't think so.

MS. HENRY: Not unless the court has some questions.

THE COURT: I have no questions. Objection sustained. I don't think there is a proper foundation for it. I think the probative value is very marginal,

if any at all, and it's outweighed by, I think, confusing the issues to the jury. The inferences that could be raised from that, I think, are probably unfair inferences.

And finally this witness doesn't recall whether or not he asked the question or not, and Captain Hazelwood is represented by counsel, and I think any interrogation of anything by this witness of Captain Hazelwood is not small talk. Whenever it can result in any kind of inculpatory statement, it's improper to interrogate the defendant.

So it will be prevented from two points of view; relevance, and I think the defendant was represented by counsel and it was improper to interrogate him.

And I am going to draw the inference that, since the witness doesn't recall, that the witness did ask the question. The burden is on the state to show that it was voluntary. The state hasn't sustained that burden.

Are we ready for the jury now?

MR. COLE: Yes, Your Honor.

(Jury present)

(665)

Q (Trooper Stogsdill by Ms. Henry:) Sergeant

Stogsdill, from the time of the defendant's first court appearance over the next several months and up to, and perhaps even including trial, did you have several occasions to talk to Captain Hazelwood?

A Sure.

Q Would you say it was quite often?

A Occasionally.

Q And was most of this just small talk?

A Yes.

Q Did you also have an opportunity to listen to tapes of Captain Hazelwood's voice?

A Yes, I did.

Q I mean, tapes that were specifically identified as Captain Hazelwood's voice?

A Yes, I did.

Q What kind of tapes were those?

A Well, I listened to the interview of Captain Hazelwood by Mark Delozier and Trooper Fox. I've listened to conversations with Captain Hazelwood and the vessel traffic center. One where he identifies himself. In fact, I think I guess I listened to several vessel traffic center tapes that Captain Hazelwood's voice appears on.

Q And based upon your personal conversations

with Captain Hazelwood and your listening to some of these tapes, do you feel that you could recognize Captain Hazelwood's voice?

A I think so.

Q Sir, showing you what has been marked as plaintiff's 117 for identification. Could you please identify that?

A It's a tape that contains the inbound report from the Exxon Valdez to the Vessel Traffic Center.

Q That would have been on March 22?

A Yes.

Q Sir, showing you what has been marked as Plaintiff's Exhibit 120 for identification. Can you identify that?

A This looks like a tape that the Coast Guard made at our request, which contains a conversation between the Exxon Valdez and the Vessel Traffic Center.

Q And do you know the date of that conversation?

A This would have been the 24th of March.

Q Does that tape also reflect specific times in the conversation?

A I think so.

Q I'm sorry, what?

A I think so, yes.

Q Showing you what has been marked as plaintiff's Exhibit 21 for identification, could you please identify that?

A This is another tape the Coast Guard provided at our request, which also contains a conversation between the Exxon Valdez and the Vessel Traffic Center.

Q You were aware that a subpoena was issued during the trial to a Mr. Byers to fly to Valdez and actually make those copies?

A I'm aware of that, yes.

Q Have you listened to all three of those tapes?

A Yes, I have.

Q Do you recognize anyone's voice on those tapes?

A Captain Hazelwood's voice appears on all three of these tapes.

Q All right. Thank you, sir. At this time the state would move for admission of 117, 120 and 121.

MR. MADSON: Your Honor, I'm objecting if there is anything on these tapes to be -- in other words, if there is an offer of proof or there is some relevance, other than the fact that his voice appears

on the tape. If that's the case, I don't have any objection. If it's to be used for any other purpose, then I do.

THE COURT: Why don't you come on up.

(836)

(Whispered bench conference as follows:)

THE COURT: Are any of these already in evidence at all?

MS. HENRY: Pardon me?

THE COURT: None of these are in evidence at this time?

MS. HENRY: Yes. I've never moved them until today.

THE COURT: Okay. But we've heard them.

MS. HENRY: Yes. Mr. Byers, from the Coast Guard, as well as the VTC fellow, Shepherd.

THE COURT: Have they been played to the jury?

MS. HENRY: No.

THE COURT: Okay. None of them have been played to the jury. (Indiscernible - whispering).

MS. HENRY: That's correct, Your Honor. 117 was flown out on the 22nd. These are nine hours -- one of them is nine hours after the grounding, and then (indiscernible - whispering). So the purpose is the difference in voice.

MR. MADSON: Your Honor, we have reason to believe -- a good reason to believe that the inbound tape is at the wrong speed. This is the one where the copy was made from a copy.

THE COURT: We've already discussed that. Okay. Any other objection other than that?

MR. MADSON: Well, I think this (indiscernible - whispering) foundational problems for any inference that can be drawn (indiscernible - whispering).

THE COURT: Okay. I'm going to admit it at this time. Before they go to the jury if you come up with a legitimate dispute. So far you've made an assertion, but there's been no evidence that there is anything relevant. So at this time they will be admitted provisionally. The inbound tape -- the other two will be admitted without provision. The inbound tape is (indiscernible - whispering) to claim some wort of problem, but will be admitted provisionally.

And that will be, 117 is admitted provisionally. 121 and 120 is admitted without reservation at this time.

(905)

(Whispered bench conference as follows:)

THE COURT: And, Mr. Madson, it will be your burden to call that to the court's attention at such

time that you deem it proper.

They're admitted.

EXHIBITS 117, 120, 121 ADMITTED

Q (Trooper Stogsdill by Ms. Henry:) Sir, what is Captain Hazelwood's height?

A His height?

Q Yes.

A I think it's recorded as six feet.

Q And what is his weight?

A 170.

Q Finally, counsel for the defendant have, on occasion in this trial, claimed that they have not seen certain documents. Are you aware of the procedures in our office to provide copies of all documents to defense counsel, even those that we never got?

A Well, I think your...

Q Or, we never saw?

A I think your policy has been, "we give everything".

Q And to your knowledge, has that occurred in this case?

A As far as I know.

CROSS EXAMINATION OF TROOPER STOGSDILL

BY MR. MADSON:

Q Well, sir, you had been working on this case since April, right?

A Yes.

Q Now, first of all, Ms. Henry asked you a number of questions about documents that you did not see or did not get until January some time, right?

A That's right.

Q You said that there was some court proceedings which prevented you from getting those documents?

A Well, I think what I said was that there was a legal issue which we were pending the outcome, and then there was a procedure set up that prevented us from getting those documents until the court decision took place.

Q When you say "we", you're talking about yourself, Ms. Henry and Mr. Cole.

A And Mr. Adams.

Q And Mr. Adams.

You know, however, that the District Attorney's office had this material all along?

A Yeah. One person in the District Attorney's Office had it all.

Q Right. And he could have given it to you any time he wanted to if he chose to do that. But

for his reasons and his particular concerns in the case, he did not, isn't that right?

A Well, I think he was involved in the initial set-up of the procedure. I think he was going to stick to that.

Q Yes. He made a decision as to what he wanted to do and how he should go about it, right?

A Correct.

Q But he could have made a different decision, then, wouldn't he? And if he made a different decision, you would have got the material a lot sooner?

A I suppose he could have made any decision he wanted, but he's got to -- the original...

Q Okay. What I'm getting at, Sergeant, is that the defense in this case certainly didn't keep anybody from getting any documents, did they?

A Oh, no, we weren't directly responsible for that, it was -- we were awaiting the outcome of the legal issue.

Q Now, you said you listened to the tapes, including one, I believe if, 117 -- Exhibit 117, the inbound tape.

A The inbound tape, yes.

Q How much of tape did you indicate on there

what is Captain Hazelwood's voice, compared to anybody else?

A Oh, there's other persons on the tape. There's the Vessel Traffic Center -- I think Mr. Shepherd is there. There is another officer on the Exxon Valdez speaking and Captain Hazelwood.

Q What do you recall Captain Hazelwood saying, anything in particular?

A Basically, yes. The Vessel Traffic Center had gotten the initial report from the Exxon Valdez; told them to stand by and then relayed some berthing information to the Exxon Valdez, to which Captain Hazelwood acknowledge that and indicated that they would make those arrangements when it got closer up or something.

Q Roughly, how long a conversation would you say this was?

A Seconds -- 20 seconds; 15 seconds.

Q Ten to 20 seconds, would that be fair?

A Somewhere in there.

Q Lastly, you said he was six feet an 170 pounds. Did you weigh Captain Hazelwood, or how do you know this?

A I think that was the information that he provided to the jailer after the arraignment

booking.

Q That was basic booking information is what it was?

A Yes.

Q And you've made a note of that in your notes?

A Actually it just came right off of their document.

Q What about his age?

A Oh, I think he was born in '46. I don't recall the day -- September something, '46, I think.

Q Which would make him 43 or 44?

A Yeah.

Q And certainly not in his 50s?

A In his 50s?

Q Fifties?

A No.

Q I don't have any other questions. Thank you.

MS. HENRY: No questions.

THE COURT: You may step down.

(Witness excused)

MR. COLE: The state would call Mr. Richard Prouty.

(Oath administered)

A I do.

RICHARD W. PROUTY

called as a witness in behalf of the plaintiff, being first duly sworn upon oath, testified as follows:

THE CLERK: Please be seated. Sir, would you please state your full name, and then spell your last name?

A Richard W. Prouty, P-r-o-u-t-y.

THE CLERK: And your current mailing address, that is, your business?

A 5600 East Waterloo Road, in Edmond, Oklahoma.

THE CLERK: And your current occupation?

A I'm currently employed as the Chief Forensic Toxicologist with the Office of the Chief Medial Examiner for the State of Oklahoma.

DIRECT EXAMINATION OF MR. PROUTY

BY MR. COLE:

Q Mr. Prouty, why have you been asked to testify in this matter?

A I was asked by the District Attorney's Office if I would review certain information and documents associated with the grounding of the Exxon Valdez, to evaluate the role of alcohol, if any, that may have been associated or contributed to that grounding.

Q Would you please define what toxicology means?

A Surely. Toxicology most simply described is the study of poisons. More specifically it's the study of the adverse or the undesirable affects of drugs and other chemical agents upon the human body. These studies encompass a knowledge of the effects of drugs and other chemical substance on the human body, as well as the methods that are used in the laboratory for the isolation and identification and measurement of the presence of these drugs, and interpretation of the significance of the analytical findings.

Q What is a forensic toxicologist?

A Well "forensic" simply means to debate. More specifically, those of us that are employed in this profession are doing toxicology in which the findings are used in a court of law, or in some other arbitration or legal proceeding.

Q What are your duties presently as a chief forensic toxicologist?

A As the chief toxicologist with the medical examiner's office my responsibilities include the direction of the laboratory investigation of deaths that occur throughout the state of Oklahoma. The medical examiner's office in Oklahoma is a state agency. And we are

statutorily required by law to investigate certain classes of deaths, or certain types of deaths that occur within the state. This includes all accidental deaths, all homicides, all suicides, all deaths that occur in institutions of incarceration, in jail or prison. And as part of these investigations, most frequently laboratory studies are done in which specimens are collected at autopsy from the body and these specimens are sent to my laboratory for toxicological evaluation.

Q I would like to talk a little bit about your educational background? When did you attend college?

A My undergraduate training was from 1949 to 1953.

Q What did you major in at that time?

A In chemistry.

Q And where was that at?

A That was at Auburn University in Auburn, Alabama.

Q And after that did you attend any graduate schools?

A Yes, I did.

Q Where did you attend graduate school?

A I took two courses in pharmacology and physiology at Auburn, University. But I, also, later -- subsequently attended graduate school at the University of Maryland in Baltimore at the professional schools.

Q And why did you attend that school?

A At the University of Maryland?

Q Yes.

A I was enrolled in a Ph.D. program in toxicology that was offered at that university.

Q Did you receive your degree there?

A No, I did not.

Q Would you explain why?

A Yes. I was there from 1958 through 1961, during which time I completed all the didactic requirements for my Ph.D., excluding -- that is all the formal course work -- excluding completion of my research and thesis.

In late August, early September of 1961 I was offered an opportunity of employment in North Dakota with the North Dakota State University. And with that I was also given the opportunity to complete my research and thesis, and I accepted that position. However, I never did find time to complete my analytical work and write the

dissertation.

Q Well, let's talk for a minute, then, about your training experience in the field of forensic toxicology. When did that begin?

A Actually, it began around November of 1951. I was employed on a part time basis as an analyst in the laboratories of the State of Alabama, Department of Toxicology and Criminal Investigation. The home office being located there on the campus at Auburn University.

I was there in that capacity on a half time basis while completing my graduate studies from November of '51 to June of 1953.

Q What were you doing then?

A I was doing routine analysis for some of the more common drugs, including alcohol in the investigation of deaths.

Q And after working in that, where did you go to work -- where were you employed after that?

A In the early summer of that year of '53 I accepted full time employment with the State of Alabama, Department of Toxicology and Criminal Investigation as an associate toxicologist. And in July of that same year I was appointed as director of a regional laboratory of that agency,

which was at Montgomery, Alabama. I opened that laboratory. And I was there from approximately July or August of 1953 through October 1954. During which time I was responsible for the laboratory investigation of deaths that occurred within a 14 county division of that agency.

Q After that did you end up going into the military?

A Yes, I did.

Q What did you do when you were in the military?

A I went on active duty as a commissioned officer in the medical service for the United States Army in October of '54. And after a brief officer's orientation course at Fort Sam Houston, Texas, I was assigned as director of the toxicology laboratories of the 406 Medical General Laboratory in Tokyo, Japan. This was in December of 1954. I remained in that capacity through July of 1958.

My duties there were to direct the laboratory investigation of deaths that occurred among military personnel and their dependents throughout the Far East command, which included at that time Japan, Korea, Okinawa, and some of the outlying islands.

Q And did your responsibilities require testing of samples?

A Yes, it did.

Q And it would have been also for alcohol and other drugs?

A Alcohol and other drugs, yes.

Q What rank did you achieve then in the military?

A On active duty I achieved the rank of first lieutenant. After I returned from Japan I was honorably discharged from the active service, but I remained in the active reserves of the United States Army for some 26, 28 years, and I achieved the final rank of full colonel. I am currently in the retired reserves of the Army.

Q After leaving the military in 1958, what did you do then?

A That's in October of 1958 when I enrolled in the graduate training program in toxicology at the University of Maryland in Baltimore. And I was there for some three years as a full time student and research associate.

Q What were your responsibilities as a full time student and research assistant?

A Well, my responsibility as a full time student

was achieved in the graduate education in forensic toxicology. Taking, basically, the basic sciences courses within the medical school, supported with additional graduate studies in chemistry and pharmacology, in the College of Pharmacy. Some of those courses were there. Some of them were in the College of Dentistry. And some were on the main campus of the University of Maryland at College Park.

My duties as a research associate primarily was that in conducting a research project which was going to be used for my Ph.D. dissertation. But I also had occasion to participate as a research associate with the Department of Pharmacology at the medical school two summers.

Q I think you testified that in 1961 you went to North Dakota. What position did you accept in North Dakota?

A It was a joint position. I was hired primarily as the state toxicologist for the state of North Dakota. This appointment carried with it a joint appointment as an associate professor of toxicology within the College of Pharmacy at North Dakota State University in Fargo.

Q What were your responsibilities in that

position?

A My responsibilities as the state toxicologist was to establish a laboratory system within the state of North Dakota to provide toxicological investigation of deaths and other accidents and injuries that occurred throughout the state, to establish this laboratory equipment and provide the service for both law enforcement and for the medical treatment facilities, the hospitals throughout the state.

A large part of my activity in North Dakota was associated with alcohol in that I was also charged by state law to establish approved methods for determining blood alcohol content as used in law enforcement of the state statutes, driving under the influence of alcohol.

I was also responsible for approving various testing devices, instruments that were used in the state by law enforcement for that purpose. And I was also charged with the responsibility of training and certification of individuals that were performing chemical tests for intoxication in the state, including law enforcement officers.

Q Now, would those last three responsibilities that you just mentioned, would they have fallen

under your duties as the state toxicologist, or as a director of the North Dakota Alcohol Traffic Safety Program?

A Well, primarily as the state toxicologist, because by state law of North Dakota the state toxicologist is charged with those responsibilities and is also required to train and certify testing methods and individuals within the state.

Q At some point did you leave North Dakota then?

A Yes, sir, I did.

Q And where did you go from there?

A To Oklahoma.

Q And that's where you have your present position as chief forensic toxicologist?

A Yes, sir. That was in September 1972.

Q And how many people do you have working underneath you in your present position?

A I have five forensic chemists, a laboratory aide, an evidence technician, an associate toxicologist, who is a Ph.D., as my first assistant, and a secretary.

Q Now, during the last forty years that you've been involved in toxicology, have you received any academic appointments during that time?

A Yes, sir, I have.

Q Would you tell the jury what those -- what have those been?

A Well, my first academic appointments were as an associate professor of toxicology at North Dakota State University. That was in October 1961. In 1965 I was promoted to the rank of full professor at that same university and held that tenured position at the time I went to Oklahoma.

I currently hold and adjunct professorship at the University of Oklahoma Health sciences center in Oklahoma City within the College of Pharmacy as an adjunct professor of Toxicology.

I also hold an appointment as an adjunct professor in the forensic sciences programs at Central State University, which is in Edmond Oklahoma, just outside of Oklahoma City.

Q And as an associate professor and a professor of toxicology back at North Dakota State, what type of courses were you teaching?

A I was charged primarily with the teaching of a required course in general toxicology for all pharmacy students in their undergraduate program. The pharmacy that NDSU has -- at most universities there is a five year program, and

that was taught either in the fourth or fifth year.

I also was director of the graduate training program within the College of Pharmacy. That was funded by the United States Public Health Service. A graduate program that supported students in pursuit of a master's degree in toxicology. The program being under my direction. That was for approximately six or seven years.

Q I would like to talk about some of your other professional activities in the area of forensic toxicology. We mentioned briefly that the position of being the director of North Dakota Alcohol and Traffic Safety Program. When was that?

(1920)

A It went with the inception of my position there of '61.

Q And what were your responsibilities as the director of that program?

A Well, in addition to being responsible for the selection and approval of testing methods, my laboratory -- that is, the state toxicology laboratory in Fargo, under my direction,

performed all of the blood alcohol analysis associated with driving while intoxicated violations within the state.

I say all of them -- I'd say 99.5% of them were done in my laboratory. There was one other laboratory, a private laboratory in the state that was approved by my position to conduct similar analysis.

Q And have you been asked to be a consultant toxicologist at certain period of stages of your career?

A Yes, sir, I have.

Q Would you explain when those were?

A Well, during my tenure at North Dakota State University, or my time in Fargo, I was consultant to the Veteran's Administration Hospital on matters of toxicology, which was located there in Fargo. I was also a consultant to the Poison Information and Control Center for the state of North Dakota at that time.

In times past, while during my tenure in North Dakota, for several years I served as a toxicology consultant with the National Highway Traffic Safety Administration in Washington, D. C., which is a division or sub unit of the

Department of Transportation.

I also was a consultant with the National Bureau of Standards in Washington on matters of alcohol and alcohol testing. I currently am a consultant with the National Institutes of Drug Abuse of the United States government in two capacities. One as -- I am a certified laboratory inspector that is involved in the inspection and evaluation of toxicology laboratories throughout the country that are applying for certification for doing drug testing and urine with the federal program of drugs in the work place.

Q Now, we had some testimony earlier that Dr. Pete's laboratory was one of these. Are you the person that actually certifies these type of labs?

A It should be clearly understood that the inspector doesn't do the certification. The inspection process is a very important part of the certification program. The program consists of -- the laboratory must first establish its proficiency -- analytical proficiency by satisfactorily performing analysis on a battery of specimens that are sent to them.

After they had successfully completed the analytical phase, then the laboratory -- there is a site visit made of the laboratory by three inspectors. The inspection team consists of three toxicologists that have been certified through the NIDA Program. And a detailed inspection is made of the laboratory, not only of their analytical results, but their records, their protocols, their methods of analysis, their personnel files, their data files. And then the inspector makes a report to the certifying agency -- in this case, the National Institute of Drug Abuse, concerning result of his instruction.

The certification is done by the federal government, not by the individual inspector.

Q Now, are you also a member of the national guidelines committee on forensic toxicology?

A Yes, sir, I am.

Q What are the responsibilities that you have there?

A This as an ad hoc committee of 10 toxicologists throughout the United States that had been mandated a task to recommend operational guidelines for forensic toxicology laboratories throughout the United States in two areas. Those

laboratories that are performing post mortem forensic toxicology, that is, in death investigation such as my laboratory. And then another group of laboratories that we call human performance laboratories. And more specifically, these are the police laboratories or crime laboratories throughout the United States that are doing analytical testing for alcohol and other drugs.

We are not involved -- these guidelines do not encompass recommendations for urine testing. This has already been very well addressed and in great depth through federal guidelines that are actually mandated requirements today.

But these guidelines encompass our recommendations. The staffing of such laboratories. That is, the training and experience of laboratory directors, and/or the bench people. The security that should be kept on such laboratories. All of them being forensic in nature. The results, ultimately, will be used in various arbitrations and proceedings. The analytical methods that are used as to quality control and quality assurance and the degree of proof that is exercised within the laboratory in

reaching their conclusions. And methods of reporting. How are these reports generated and utilized, as well as interpretation.

These are recommended guidelines that have just been completed incidentally by this committee. I might add that the genesis of this activity was -- the committee was formed at the direction of the toxicology section of the American Academy of Forensic Sciences, and the -- another national organization, the Society of Forensic Toxicologists.

Q And you're a member of both of those organizations?

A Yes, I am.

Q Are you a member of any other professional organizations?

A Yes, I am.

Q Would you tell the jury what those are?

A I am a member of a National Safety Council Committee on alcohol and other drugs. I am a member of the Canadian Society of Forensic Sciences. I'm a member of the International Association of Forensic Toxicologists. I'm a member of the Southwestern Association of Toxicologists. I'm also a member of the American

Crime Laboratories -- Association of Crime Laboratories Directors. It's a national organization.

And as previously mentioned, of the toxicology section of the American Academy of Forensic Sciences, and the Society of Forensic Toxicologists.

Q Have you held any chairs, offices of distinction in any of those?

A Yes, I have.

Q Could you explain that?

A With the American Academy of Forensic Sciences, I served as secretary and as chairman of the toxicology section in years past, it was some time ago. I think I was chairman in 1971, '72. I'm a fellow of the academy in the toxicology section. I have served on numerous chairs with the Society of Forensic Toxicologists, first as a member of the Board of Directors for a number of years, then vice president, and I also served as president of that organization.

With the Southwestern Association of Toxicologists, I was a charter member and the first president of that association, and I've

been on the board of directors several times since then.

The National Safety Council, Committee on Alcohol and Other Drugs. I've been a member of that group for more than 25 years -- approximately 27 years, I think. I have been on the executive board of that committee for some 20 plus years. I've also served as vice chairman and chairman of that committee. I'm currently still on the executive committee of the NSC, Committee on Alcohol and Drugs.

Q What are the activities and functions of the NSC committee?

A The National Safety Council, Committee on Alcohol and Drugs, is a group of people from around the United States and Canada that direct their activities towards making recommendations of the state of the art, if you please, as far as legislation concerning alcohol and traffic safety, or alcohol in the work place. Upon testing methods better to be used. Although these are general guidelines, the committee is not in a position to endorse any specific commercial product, but on programs that -- recommending programs to be used at municipal,

county, and state, and federal level, in addressing the problems of alcohol and safety.

The committee is composed of certainly not just toxicologists, there are also lawyers, behavioral scientists, law enforcement people, people in alcohol rehabilitation at the national level. It's a rather homogenous group.

Q Now, what does national board certification mean?

A Well, it means you've been certified by a national board, and not to be facetious, but within my field, we do have the American Board of Forensic Toxicology, and this board's sole duty is to recognize -- well, to do peer review of those people that are involved within the profession, to set requirements as to training and experience within the field that must be met for board certification, and to periodically monitor the continued professional, as well as ethical performance of those within the field.

Q Have you been asked to testify in the past in civil and criminal trials?

A Yes, sir, I have.

Q Would you give the jury an idea of how many times you've been asked to testify in the past?

A That would be a very rough estimate, I don't keep track. But somewhere near a thousand times, possibly; 800, 1,000.

Q Have you been qualified as an expert in the field of forensic toxicology at those trials?

A Yes, I have.

Q In how many states around the country have you been qualified as an expert in this field?

A I don't know that I can tell you all of them, but those that come to mind. In South Dakota; in North Dakota; Minnesota; New Jersey; Alabama; in Texas; certainly Oklahoma; in Kansas; Colorado; California. I recall those. There may be others.

Q Have you had to testify in federal cases at all?

A Yes, I had.

Q Have you been qualified as an expert in federal court?

A Yes, I have.

Q Can you give the jury an idea of how many of those?

A Federal court activity is less than that within state courts, both civil and criminal, but I would say several dozen times -- 50 times

possibly, I don't know.

Q Had you ever not been qualified to testify as an expert in the field of forensic toxicology?

A No, I haven't.

Q Now, when you're called to testify as an expert, are you always called by the state or the government as their expert?

A No.

Q Would you give the jury an idea on how often during your career you have been called to testify on behalf of the defense?

A Well, again, it would be an estimate. I would say at least within the last 20 years to 25 years, possibly an equal amount for the prosecution or defense. And I'm encompassing both civil and criminal cases.

Q Now, have you written publications in the filed of forensic toxicology?

A Yes, I have.

Q And have those been published -- have you published those?

A Yes.

Q Would you give the jury an idea of the types of articles that you've written in the past, as related to forensic toxicology?

A I have published in the area of analytical methods for identification of drugs and breakdown products of drugs in the scientific literature. I have published studies associated with the evaluation of certain types of devices or instruments used for breath testing as correlated to blood testing.

I have published on the significance of blood concentrations of alcohol and other drugs in post mortem tissues. I contributed a chapter in a book that was published just last year on that particular topic.

I have also published on the significance of post mortem blood alcohol results in cadavers, in dead people. Bloods collected from different compartments of the body.

I have just recently published a very intense piece of work on the post mortem redistribution of drugs, other than alcohol in human tissues. That's a period of this month in the general forensic sciences.

Q How do you upkeep your knowledge in the field of forensic toxicology?

A I do this by reading, of course, the scientific literature that is applicable to my

field. I do this by attending workshops and seminars that are conducted throughout the United States in the area of toxicology. As well as attending both regional and national scientific meetings addressing my particular area.

Q Have you attended any symposiums in, say, the last month, or workshops?

A Yes.

Q Would you explain what that was?

A Well, I was in Cincinnati a couple weeks ago -- I think I went there the 17th of February -- in anticipation of participating at several levels. Number one was on the 21st of February was the annual meetings of the American Academy of Forensic Sciences that I had intended to participate and attend then. But prior to those meetings it was necessary that I be there to fulfill several other obligations.

One, was a meeting of this guidelines committee -- the National Guidelines Committee. We met on Saturday and Sunday, the 17th and 18th of February for our final wrap-up of the guidelines.

Also, on Monday and Tuesday of that same month -- this would have been the 20th or 21st, I

think, of February. I had to attend the board of directors meeting of the Society of Forensic Toxicologists to make the committee report.

I also attended the executive committee meetings of the National Safety Council Committee on Alcohol and Drugs that was held on Monday the 20th or 19th.

I also attended the full membership meeting of the National Safety Council Committee on Alcohol and Drugs the following morning. I also had to attend the American Boards of Forensic Toxicology Director's meeting. I'm also a director of that board. I was elected in that position last year.

So, those meetings I attended, and then it was necessary for me to leave Cincinnati and come to Anchorage; on Wednesday the 21st I came out here.

Q Now, have you yourself done studies of the affects of alcohol on the human body?

A Yes, sir, I have.

Q Would you explain that study that you did?

A Rather than address it as a simple study, I'd rather look at it as an experience in that, as part of the training activity that I was mandated to do within North Dakota -- that is, training of the law enforcement people that were to perform

breath tests within the state.

Part of this training program was to -- we had what we called controlled drinking experiments. That is to say that adult male and female subjects were given predetermined amounts of alcoholic beverages in the common forms that we all know them, as beer, wine, bourbon or gin, or whatever -- a choice. But we're gathering measured amounts of these beverages over measured periods of time after having recorded body weights, and after having noted and recorded what these people had to eat.

These drinks were dispensed in a social setting. At the same time it was a controlled experiment, in that we knew exactly what each individual consumed; when they received the drink; what the mix was; when the drink was finished; when the next drink was administered, et cetera.

The drinking phase of these studies normally took place between an hour and a half to sometimes as long as three hours. That is, the drinking experiment.

After or even during the drinking experiment these people were observed by myself and other

monitors of the training, as well as after the drinking was finished. They were subjected to various tests as to monitor or evaluate the effects, if any outlook they had to drink. And then subsequently they were subjected to a battery of analytical testing to measure their blood alcohol content. Blood as well as urine. Urine specimen was collected. And indirect testing was also done by breath testing. And the end result of such experiments was to evaluate the data obtained. That is, that a person of a given size had to drink over what drinking course, what effects the alcohol had as correlated to their blood alcohol content.

Q Now, would you give the jury an idea of what type of tests you administered besides the ones that were designed to determine the level of blood alcohol level? Did you ask them to perform, like, field sobriety tests or other tests?

A Yes. There were field sobriety tests performed, which means -- the classical tests that are used today include toe to heal walking of a straight line on the floor with abrupt turning. Standing in an erect position and

closing one's eyes and doing what we call the finger to nose test. And also the subjects were -- at the time that I did these studies, those were the two physical sobriety tests that were done.

They were also subjected to a variety of other tests. A number of these people would be tested prior to their drinking experience with the drinking experiment by putting them on driving simulators in which they were put through a course of operation of a driving simulator, which simulates being at the wheel of an automobile and you're challenged on a video screen with certain driving tasks.

Then after drinking they were subjected to the same tests and monitored to see whether there was any detriment or degradation in their performance and the control versus after drinking.

They were also subjected to a test to monitor their reaction time. That is to say that they were given a challenge first programmed to where they would be told when they were to be challenged. That is, they were prepared for the reaction time test. And then also on unchallenged -- I mean, unannounced experiments,

where during the course of a conversation they may be given an unanticipated challenge or test, in which then their reactions are recorded -- or, noted and recorded.

The reading tests were done with some of these individuals, as far as reading comprehension as to the number of errors that may be made, as well as speed of reading.

Q How many people were involved in your study?

A Over a period of some 15 years, I would say in the neighborhood of 300 to 400 or more.

Q And during the course of analyzing your evidence that you received, the results of all these tests, did you find any relationship as to elimination rates of alcohol in the body?

A Yes, I did.

Q In these studies did you have an opportunity to observe how well people who were drinking could tell you how many drinks they had had during the day?

A Yes. This was something that was routinely done with the subjects, even though they were -- this was a voluntary program. These were not human guinea pigs in a sense. But it was a voluntary program. In fact, the subjects were

even asked prior to the experiment what beverage of choice they wished to have, as, also, how they wished to have it administered, that is, mix.

And they were also asked, as far as their own drinking experience, what did they feel would be a reasonable amount of alcohol that they may wish to consume over this drinking course.

Needless to say, there were many occasions where we didn't give the people what they might have wanted to have, but they were, of course, totally aware throughout the drinking experiment, when they got their drink and how much it was.

Yet, as a matter of routine, at the end of these drinking experiments we would ask the people what, in fact, they had consumed during the drinking experiment, and as to the number of drinks. And then even this would be followed up the next day. That is, to ask them how many drinks did they have during their drinking experiment the day previously.

Q And how often were they accurate?

MR. MADSON: I'll object to the broadness of that question. Maybe if we had the results to study here, but it's an awful broad answer. How often are they accurate? In what sense?

THE COURT: Objection overruled.

Q In your experience, how often were they accurate?

A Far less than half.

Q And was it a tendency to over estimate or under estimate?

A The general tendency is to under estimate.

Q Now, could you tell the jury what alcohol is?

A Sure. Alcohol is a generic term that describes a specific chemical group of compounds. Theoretically, any organic molecule that has an OH group or a hydroxy group is an alcohol. Alcohol, as the term itself is used today without further qualifications specifically means ethyl alcohol. And ethyl alcohol is a specific organic molecule, one of a very large family of alcohols.

There's methyl alcohol, which is very closely related to ethyl alcohol. And isopropyl alcohol, which is rubbing alcohol. So there are many different alcohols that are used industrially and chemically. But ethyl alcohol is the primary ingredient, the single entity within intoxicating beverages.

Q Is ethyl alcohol considered a toxin of a poison?

A I think it can be considered as such, yes.

Q As both?

A As both. Because toxic means to have an undesirable affect, or to produce an undesirable affect upon a given subject -- a human subject. And any compound -- practically any compound, if taken in sufficient amounts, can produce a toxic response. Water can be toxic if one drinks too much.

Q How is the amount of ethyl alcohol, or just for convenience sake, alcohol measured -- the amount of it measured in a particular type of drink, or a bottle?

A As far as in the alcoholic beverages that are so licensed alcoholic beverages?

Q Uh-huh (affirmative).

A There are two ways that are used within this country, within the United States, of reporting alcoholic content in licensed beverages. In beers and in wines the alcohol content is normally expressed in percent by volume. Whereas in the distilled spirits such as the hard liquors, gins, vodkas, bourbons, scotches, it's -- the normal nomenclature for reporting the alcohol content is U. S. proof. U. S. proof is

twice the percent by volume. In other words, 100 proof bourbon would be 50% ethyl alcohol and 50% something else. I mean, primarily water and other congeners.

Q What about vodka? What is the percentage of alcohol in vodka?

(3887)

A Well, it varies with the manufacturer or the brand. Vodkas can be in excess of 100 proof. In this country most of them are less than 100 proof; some are 100 proof. Which is, 100 proof, again, being 50% by volume.

Q Can you give us an example of vodkas at 100% proof?

A I think Absolute is one of the popular brands of vodka. I believe that that's 100 proof. There are a number of the imported vodkas from russia that are over 100 proof. Most of the vodkas are less than 100. Most of them are -- well, many of them you can get either way, as a matter of fact. Smirnoff is a popular brand of vodka, and that could be gotten in 100 proof, or it can be gotten in 80 to 90 proof. The same brand but in different concentrations.

Some of your bourbons are that way. I recall

-- Wild Turkey, which is a popular brand in Oklahoma. It can be obtained as 100 proof versus 86 proof. Some of the other bourbons are the same.

Q If a alcoholic beverage read that it was less than .5% alcohol by volume, what would that mean?

A Well, it means that it has very little alcohol in it. If the label says less than 0.5%, it's obviously less than 1%, and it doesn't really tell you how much is there. It tells you it's not to exceed that concentration.

Q What would a beer be?

A A standard beer within this country?

Q Uh-huh (affirmative).

A There are three general concentrations of beers within the United States. In Oklahoma, for instance, the state laws are such that your clubs and establishments, bars, cannot serve anything other than -- I take that back. Your grocery stores cannot sell anything higher than 3.2% beer.

Q Is that alcohol by volume?

A That's right. 3.2% by volume, right.

And whereas in the liquor stores in Oklahoma you can buy what we call "strong beer", which may

be as high as 6%. Some of the malt liquors and ales may be slightly above 6%. But strong beer throughout the United States without further qualification, normally refers to beer that's between 4% and 5%.

Q Would you explain what happens when a person drinks an alcoholic beverage? How this affect him? How does the alcohol go through the body?

A Could I have a glass of water.

THE COURT: Why don't we take a break, too. This is as good a time as any.

Don't discuss the matter, ladies and gentlemen. Don't form or express any opinions.

THE CLERK: Please rise. This court stands in recess subject to call.

(Off record - 11:50 a.m.)

(On record - 12:13 p.m.)

(4200)

(Tape: C-3656)

(Jury present)

Q (Mr. Prouty by Mr Cole:) Mr. Prouty, when we -- when we left off you were talking about what happens when a person consumes alcoholic beverages.

How does this effect a person?

A Well, alcohol is known as a central nervous system depressant. That is to say that it depresses the various functional areas of the brain, which is the heart of the central nervous system, depending upon the concentration.

Now, in order for alcohol to have its effects, of course, it must get to the brain. May -- do you wish for me to...

Q How does that happen? How is it distributed through the body?

A All right. Alcohol is normally taken into the body, of course, orally. That is, by drinking. And alcohol, different from a lot of other drugs or chemicals, some of it does, in fact, pass directly through the wall of the stomach into the blood vessels that surround the wall of the stomach and get into the blood stream in that fashion.

Q However, the majority of the alcohol that we consume be -- in order for it to get into the blood it must first pass from the stomach into the small intestine, the upper portion of the small intestine, immediately below the stomach.

This area of the GI tract is very vascular. That is to say it has a very rich blood supply.

And alcohol passes through the wall of the gut, or the small intestine, gets into the blood. And this, then, the blood, of course, is not stagnant in any part of the body. The blood is being moved about the body by pumping action of the heart. And, so, the blood, now containing alcohol, will be distributed, delivered to all parts of the body. That is to say wherever the blood goes, if there's alcohol dissolved in the blood, the alcohol, itself, will go to these various tissues or organs in the body.

And, of course, the blood bathes the brain, which is essential to life, to provide oxygen and the nutrients that are needed for normal function. And if alcohol is dissolved in the blood, this alcohol now will be delivered to the various functional areas of the brain.

Alcohol is known as a progressive central nervous system depressant. That is to say that it effects various functional areas of the brain in a rather progressive, predictable manner.

It first effects those functional areas that are located in what are called the higher centers of the brain. Not higher in the sense further from the floor, but the more refined functional

areas of the brain that are located in the cerebral cortex, which is the outer layer of the brain. That is to say that the functional areas that are located in the cerebral cortex are more sensitive to alcohol. And at lower concentrations in the blood there will be predictable and demonstrable effects as a result of depressing these functional centers located in the cortex.

Q What type of -- what does this -- the cerebral cortex -- what par -- what does it have to do with how we function?

A Well, as I said before it's -- it's known as the -- the more refined, or the higher center in the evolutionary cycle of development of man as we know it today. This is one of the more refined, or the last development area.

And in the cortex are the functional centers that are associated, or control our inhibitions. Inhibitions may be thought of as your moral, or your social breaks. And if your inhibitions are depressed, that is, you are no longer as inhibited as what you were before you had the alcohol, then you'll respond in a different manner socially and behavior wise than what you

might have done had you not been drinking.

Also, in the cerebral cortex are located the functional areas that are associated with reasoning and judgment. And associated with reasoning and judgment is decision making. That is to say that at lower blood alcohol concen -- quite low blood alcohol concentrations, one's reasoning and judgment will be predictably impaired. That is to say that you may not reason out a given situation with the same precision and make the same logical decision as a result of that reasoning as what you would do had you not been drinking.

Then, as the blood alcohol concentration increases, then there are other areas of the brain that are less sensitive to alcohol, but now they may be effected, including one's vision can be effected at certain concentrations -- sharpness of vision, that is visual acuity. One's speech can be frequently effected by alcohol. Many people have more difficulty in speaking articulately and clearly when alcohol is present than when not present.

The motor movements, that is muscular coordination is impaired later by alcohol. That

is to say that we do not move as well. This interplays in one's staggering gait, or one -- if a given deliberate movement is made, it's made in a more uncoordinated fashion than what it would be if alcohol were absent.

As the blood alcohol concentration increases, that's bathing the brain, then more serious effects, serious as far as life threatening come into play. And these have to do with one's state of consciousness.

In lay terms we think of people becoming sleepy, or sedated by alcohol. And, in fact, what is happening, the alcohol is depressing the functional area of the brain associated with consciousness and you are not as awake. And if sufficient alcohol is there, then one goes to sleep.

The alcohol can continue to effect even more vital -- what we call vegetative centers of the brain, those that are essential to life. And these are located in what we call the mid-brain. And the functional areas more profoundly effect -- or critically effected is one's respiration, that is one's breathing is slowed. And if sufficient alcohol is there, one stops breathing.

And of course, respiration is essential to life, so alcohol can kill by knocking out the functional area that controls breathing.

Closely associated that is our heart rates, or our heartbeats. It's also controlled from a functional area in the mid-brain. And, of course, this will be knocked out about the same time that respiration would. One is a consequence of the other.

It should be understood that in thinking of this, understanding this as a progressive central nervous system depressant, this doesn't mean that there's more alcohol in the cerebral cortex than there is in the mid-brain. It means that the functional areas that are located in the cortex are more sensitive to alcohol.

The brain can sort of be looked at as a complex electronic device that's made up of many different circuit boards, one circuit board controlling inhibitions, reasoning and judgment, vision, speech, muscular coordination, respiration and heartbeat. Those latter two are much tougher. That is to say, they don't get knocked out by alcohol, or adequately depressed, except at very high concentrations. Whereas

those circuit boards in the cerebral cortex may be very sensitive to alcohol, and at even very low concentrations they may malfunction, or may result in impairment.

Q Have scientific research linked the relationship between the use of alcohol and its effect on the higher, or refined areas of the brain?

A Yes.

Q We've talked -- just for a minute -- we talked about the distribution of alcohol throughout the body. Now would you explain how alcohol is eliminated from the body?

A Yes. The distribution -- I failed to say one thing. It's distributed to these various tissues and compartments depending upon the water content. There is no -- some drugs have a specific authentity [sic] -- affinity for a given organ, such as iodine for the thyroid gland, and that's why you can give radio-active iodine and it will cure disorders of the thyroid.

But, alcohol is distributed not uniquely to any one organ other than the water content of that organ.

But, the alcohol that comes into the body, of

course, ultimately, sometime will leave the body. and this -- we call this elimination. And this elimination takes place through a number of routes. There are various mechanisms by which the body gets rid of the alcohol.

It will leave the body as a result of respiration. Just breathing. That as the blood that is bathing the little air sacs in the lung, as that blood passes through the capillary beds in the lungs, some of the alcohol will move from the blood into those tiny air sacs, which then are deflated, and we blow it out in our breath. This was the basis of breath testing for blood alcohol content.

A very small amount of alcohol leaves the body in that fashion. Alcohol also can be eliminated, and is eliminated through the pores of the skin, through perspiration. And, again, this accounts for a very small amount of it.

Alcohol is also eliminated through the body by excretion into the kidneys. As the blood, containing alcohol, passes through the kidneys some of that alcohol is filtered out -- is filtered out of the blood and appears in this clear filtrate, which is urine that then passes

into the bladder and subsequently is voided from the body. So, we sort of think of the kidneys as being a pretty sophisticated filter plant.

All of these previous routes that I've just mentioned -- means of elimination account for less than 10 percent of the alcohol that we eliminate.

(578)

More than 90 percent, it's estimated approximately 95 percent, of the alcohol that we consume is eliminated by the liver. The liver -- whereas the kidney is thought of as a -- as a filtration plant, the liver may be looked at as a very sophisticated garbage disposal unit.

The major role of the liver is to detoxify, or to break down, or to chew up foreign materials that are brought in the body. And alcohol is handled by the liver in that it chemically converts the ethyl alcohol to carbon dioxide and water. And the -- we breathe the carbon dioxide out through our lungs and the water, some of it's eliminated through your skin, some through your lungs and some of it, of course, through your gut or through your kidneys.

So, the liver is primarily responsible for

getting rid of the alcohol that we consume.

Q I'd like to ask you about the odor of alcohol. When people say they smell alcohol, what are they actually smelling?

A Well, it depends on -- under what circumstances they're doing this.

Ethyl alcohol does a characteristic odor. Contrary to some chemical tests -- I have actually seen in some chemistry books that alcohol is listed as a colorless, odorless liquid. But, ethyl alcohol does have a very characteristic odor. It's a sweet, fruity odor.

But, when one describes the odor of alcohol on people that have been drinking, what one most normally is noting on a person's breath, in addition to small amounts of alcohol, will be the presence of other volatile materials that are in the alcoholic beverage they have been consuming, such as oh, we call these congeners, or -- these are additives that are present in the beer, or that are result from the fermentation process, are in the cognac as a result of the fermentation and subsequent distillation, or in the bourbons from blending of various mash whiskeys. Each have their own characteristic color and odor and

taste. And I guess that's why some people prefer scotches over gins, versus bourbons.

But, these congeners are -- when we drink, we're drinking those along with the alcohol. And they, too, are absorbed into the blood stream. And they, too, will pass -- by the pumping action of the heart, this blood will pass through our lungs, and some of those are quite volatile and have very strong odors. And as a consequence when we exhale, or breathe out, this imparts a odor, a characteristic odor to one's breath.

Q Do some alcoholic beverages give off more odors than others?

A Oh, definitely so. Yeah.

Q Would you explain that?

A You mean, into the breath of a person that's been drinking?

Q Yes.

A Yes. Well, again, it depends on what's present. Bourbons, American bourbons are characteristically heavier and darker, and contain more congeners than do some of the light, blended whiskeys, such as Canadian rye whiskeys. Scotches, particularly -- not malt liquor scotch but blended scotches, many of them are very

heavy, or -- scotch drinkers talk about they have a smoky taste, or a smoky odor. This is due to the presence of the congeners that are there. And as a consequence of drinking these different beverages it will result in imparting a different odor, different type of odor, and a different strength.

Q Where does vodka stand on the -- as far as giving off an odor?

A Vodka's general considered to impart less odor to a drinker's breath than some of the other heavier blended whiskeys. The reason for this, that vodka, which is actually -- true vodkas are made from fermentation of potatoes that are then distilled. And vodkas are clear, colorless liquids. They have less congeners than to bourbons and heavy scotches. So, it would impart less odor to one's breath than some of the others, as would gins.

Q I'd like to focus for a minute on current methods of analysis of blood alcohol content.

Are you familiar with the current forensic methods of analyzing blood alcohol content in blood and urine specimens?

A Yes, sir. I am.

Q Would you explain to the jury what those are?

A By far the most popular and most frequently used method for doing blood alcohol analysis today incorporates an analytical instrumentation known as gas chromatography.

The -- both qualitatively and quantitatively this system is used for the identification and measurement of the alcohol content.

There are other -- what we call wet chemical methods still used in many parts of this country, and particularly in Europe, where the alcohol is distilled from the blood and that distillate is then subject to what we call a wet chemical analysis.

And their other general class of analyses for alcohol involve what we call enzymatic methods of determination, where an enzyme is used to measure the quantity of alcohol in a specimen.

In forensic laboratories, the -- the latter method is not used that commonly. It is still frequently used in clinical laboratories.

Q Would you explain to the jury how gas chromatography works to determine the amount of alcohol in blood and urine?

A Yes. The -- there are two general approaches

-- well, first, gas chromatography, or a gas chromatograph is an instrument, an analytical instrument, that consists of -- basically, of three functional components.

It consists of an inlet through which a sample is administered.

It consists of a column that is packed with a material that has the capability of separating very closely related mol -- organic molecules. That is to say that if you were to introduce a mixture of closely related organic molecules, such as methyl alcohol, ethyl alcohol, amylpropyl isopropyl alcohols, if you introduced them as a mixture onto the column, they will be separated into their individual components as their vapors pass through this column. They will be separated into their individual components where they exit from the exit from the end of the column as separate substances. So,you put on a mixture of four or five compounds and they come off individually as separate components.

And the third component of that system is a detector to sense the presence of that molecule, or that compound as it exits the column.

And there are a number of different types of

detectors that are used in gas chromatographic methods, but the most frequently used for blood alcohol determination is what was call a flame ionization detector.

This is nothing more than, as it sounds, a tiny flame at the end of the column that is composed of air and hydrogen. And under zeroing, or balancing conditions of the instrument the carrier gas that is used to purge, or carry these materials through the column, the carrier gas and/or anything else that may be present in the system when it exits through this hydrogen flame it is ionized, it's burned, broken into ion particles.

And there are two little electrodes that collect these ions and measure those -- the -- the change in the electric fields, which gives a signal to a recorder and cause a deviation of a pin on a strip chart that indicates the presence of a compound coming off the column at a given moment in time from the time it was injected.

(998)

Under control, or blank conditions this recorder pin will trace on the paper as the paper moves on what we call the zero line. That is to

say it is balanced to the control conditions of the analysis.

Now, a specimen is introduced onto the column, and if ethyl is present it will pass from the end of this column at a predictable time, depending on the operating parameters of that system. And when the alcohol appears in this flame an electrical field is created which goes through an amplifier. And as the paper moves the pin moves up the paper. And, then, as it starts to decrease, as it's being dissipated in the flame, that is, all of it's coming off, the pin returns to the zero line.

So, the point at which that compound exits the column is characteristic of a given molecule. And the size of the peak -- the area underneath that line is characteristic of how much alcohol was present in that sample.

So, in the application to blood alcohol analysis...

THE COURT: Excuse me a second. Counsel, approach the bench, please.

(1064)

(Whispered bench conference as follows:)

THE COURT: Let's move this witness along.

These long lectures are in my opinion taking more time than is doing good. I'm going to cite some authority under evidence rule 611, Mr. Cole, and have you start getting to the point on this witness.

(End of whispered bench conference.)

(1085)

Q (Mr. Prouty by Mr. Cole:) Are you familiar with the method that was used to collect the blood and urine samples in this matter?

A Yes. I am.

Q And would you explain that to the jury?

A It's my understanding that the urine specimen was passed into a container that was designed for the collection of urine for alcohol and drug analysis, and that the urine was collected while observed, and was subsequently labeled and sealed. And that the blood was collected by the application of an antiseptic agent to the injection site and blood was withdrawn and placed into a similar kit designed for such forensic purposes and was labeled and sealed.

Q If this package was set on a window and the window was open, and it was about 35 degrees near the window for part of the day, would that effect the samples inside the package?

A No. It would not.
Q And if that sample was placed in a galley refrigerator for that evening, and then picked up the next morning, would that effect the reli -- the substance inside?
A No. It wouldn't.
Q And if that was then taken to Anchorage on the 25th and placed in a locked refrigerator until the 27th, would that effect the substance contained in that?
A No.
Q And have you reviewed the documents produced by Compu-Chem about the receipt of these samples?
A Yes. I have.
Q Are you familiar with Chem West and Compu-Chem Laboratories?
A Yes. I am.
Q Why are you familiar with that lab?
A Well, for a number of reasons. One, I have been professionally associated with the director of that laboratory for some five to seven years, Dr. Peat. I'm aware of the work product of that laboratory as being one of the NIDA (ph).

They are a derivative of Compu-Chem. They're called Compu-Chem West. They are actually a

derivative of Compu-Chem laboratories, which is a large analytical toxicology laboratory located in North Carolina. And I've been familiar with that laboratory and its activities for a number of years.

Q And are you familiar with their standard method of analysis used during the year of 1989 for blood an urine analysis?

A For alcohol content?

Q Yes.

A Yes. I am.

Q Explain this, please.

A Well, I've had occasion to review the various documents that were generated by Chem West, or Compu-Chem associated with the receipt and analysis and reporting of the specimens.

This occasion arose -- specifically, frankly, at my request that if I were to issue an opinion -- if I were to be asked to issue an opinion concerning the competence of the laboratory, I would like to have an opportunity to review firsthand how it was done and how it was handled.

Q And have you had a chance to review the policies?

A Yes. I have.

Q And, specifically, how the samples were tested in this particular case?

A Yes. I have.

Q And would you explain why the director signs off instead of performing the analysis, himself? Is that a common procedure in your field?

A Yes, sir. It is.

Q Why is this?

A Well, couple very obvious reasons. The workload of such a laboratory absolutely precludes any one person doing all of the analytical work that's done there.

And Compu-Chem, I have personal knowledge, is a very high volume laboratory, as is mine. And, also, of course, it's physically impossible -- other than being physically impossible to do all of those analyses, it is good analytical protocol to have independent review of the results that are generated by the initial analyst. This is a double check on the system, if you please.

I employ such procedures in my laboratory.

Q Have you had an opportunity to evaluate the way the samples were handled once they reached Compu-Chem laboratories until the time they were tested?

A Yes, sir. I have.
Q And do you have an opinion as to accuracy of the results that were reached?
A Yes, sir. I do.
Q Do you have an opinion as to the concentration of ethyl alcohol in the blood and urine of Captain Joseph Hazelwood at 10:30 a.m. on March 24th, 1989?
A Yes, sir. I do.
Q What is that opinion?
A That the blood alcohol concentration was 0.6, or 0.61, I think, specifically. And that the urine was 0.94.
Q What...
A And let me -- excuse me. That's 0.061 and 0.094.
Q What is the significance of .09 blood con -- alcohol content in the urine?
A The .09 in the urine...
Q In the urine sample, yes.
A As it relates to the blood? Is that your question?
Q Yes.
A Well, as I testified earlier the alcohol that is in the blood, some of this alcohol passes from

the blood into the urine as the blood passes through the kidney.

And, also, I testified that alcohol is distributed in the body based upon water content of the tissue. Urine contains more water than does blood. Therefore, urine will have at equilibrium -- will have a higher concentration than blood does at any one moment in time.

By the same analogy bone may have some alcohol, but it would have infinitely small amount as compared to the blood.

Q Does the presence of alcohol in the urine confirm the presence of alcohol in Joseph Haz -- Captain Hazelwood's system?

A Yes. It certainly corroborates it, yeah.

Q And does that fact that there is a difference between the amount of alcohol found in the blood and the amount of alcohol in the urine have significance?

A No. Not in this case. Not of any real significance.

Q Why is that?

A Because the -- in my opinion the urine alcohol concentration in this case corroborates the concentration of the alcohol in the blood.

Urine alcohols are not normally used forensically, a single urine sample, are not normally used as definitive evidence of an absolute blood alcohol concentration.

The reason for this is that the urine alcohol results, as I said, from the filtering of the blood into the bladder. And if one starts drinking and has -- and takes a significant amount of alcohol in over a relatively short period of time, and if there is already urine in the bladder that is alcohol free, then, as this new urine is formed, containing alcohol, and it now passes into the bladder that has urine -- alcohol free urine -- then, the subsequent mixed concentration of that urine would be less than what it was at the time that the urine was formed when it left the kidney.

So, in such an instance in early phases of drinking, if one were to try to apply a fixed equilibrium ratio of urine to blood, one would tend to underestimate the concentration of alcohol in the blood.

On the other hand, if a person had an empty bladder, and then drank a considerable amount of an alcoholic beverage, and then did not void,

that is to say did not empty their bladder for a protracted period of time, since alcohol is being eliminated at a relatively regular rate from the blood, the blood may decrease to a practically insignificant concentration. Yet, the urine, which hasn't left the bladder, could have a very significant concentration. And such and instance, such as someone drinking heavily this evening, going to bed, not urinating, getting up the next morning, it's conceivable that their blood alcohol could be quite low, yet the urine alcohol might be quite high.

So, those are the two extremes in which a single urine sample may give misleading results.

However, at equilibrium there is a ratio that may be used to estimate the blood alcohol concentration from a urine concentration and although the recommended protocol, if one is to use urine to obtain a definitive value for blood, that the procedure is to have the individual empty their bladder, and then, after a waiting period of 30 minutes to an hour now collect that urine and record the time and one could make a more precise estimate of the blood concentration.

The relationship that we observe in this case

of .094 of the urine concentration and .061 for the blood concentration, if one were to use the equilibrium ratio that is commonly accepted in the refereed literature of the urine being approximately 1.33 times as concentrated as the blood, because it has more water. If you apply that -- if you divide the .094 by 1.33, you achieve a number of 0.07.

If one were to use the factor that I most frequently use on a single urine void, that is to where you don't enter the bladder, wait a fixed period of time, and then collect the urine, the average ratio that I use is 1.5. That is, that the urine is 1.5 higher than the blood.

And if you divide your .094 by 1.5 factor, you get a .06.

Both of these numbers are quite close to the measured concentration -- in this instance, are quite close to the measured blood alcohol concentration of .061.

Q Based on your own studies, and the knowledge of the scientific literature, can one associate certain blood alcohol concentrations with various levels of intoxication?

A Well, yes.

Q Would you explain why that is?

A Well, it's just -- the reason this is, is that there's been a tremendously large number of studies over the last 50 to 75 years measuring just that. That is to say dosing subjects with alcohol, having them perform various tasks, and most assuredly the greatest area of testing has been in motor vehicle operation. That is in operating of automobiles -- and measuring their impairment. Measuring their mistakes, measuring their errors, and associating that with the measured BAC.

And the -- well, one should understand that in applying a given blood alcohol concentration to intoxication, or impairment, one has to consider the task. That is to say, one may have a very significant blood alcohol concentration and if their only task is to watch a home video for pleasure, that may not be as consequential as if they were required to make some very precise visual observations on which a technical decision has to be made.

So, the blood alcohol concentration at those two task requirements can be considerably different for acceptable performance.

Q And does that equally apply to a blood alcohol concentration of .061?

A Well, certainly. Yes.

Q So, for some -- some activities it's not significant. And for other activities, it would be significant?

A In my opinion, yes.

Q Over the years have there been blood alcohol concentrations associated with legal impairment established by municipal and state and federal bodies?

A Yes.

Q And have those blood alcohol concentrations varied according -- accordingly?

A Yes. They have. Depending upon when these --when these pronouncements were made and what was available at that time as far as scientific research and interpretation of those.

Q Would it be fair to say that there are in -- in the operation of motor vehicles there are different blood alcohol concentrations that are associated with legal impairment?

A Yes, sir.

Q Would you give the jury an idea of the variances?

MR. MADSON: Your Honor, excuse me, but I think we're in Alaska. And I think there's only one figure that's really important. And what Oklahoma or North Dakota might say on the subject I think is totally irrelevant.

THE COURT: Mr. Cole?

MR. COLE: Your Honor, I think I believe it's relevant to show what people in other areas have done as far as what is legal impairment. We have two standards that are gonna be discussed in this case, the Coast Guard one and the Alaska one. And I believe that he should be able to testify as to different levels of activity and the various levels of impairment that are associated with that.

THE COURT: Objection overruled.

Q (Mr. Prouty by Mr. Cole:) Would you give examples of this?

A Yes. Currently, today, to my knowledge, there is not a state in the United States that has statutory limits for impairment as far as motor vehicle operation in excess of .10 in the blood. Canada, nationwide, has the legal limit set at .08. There are several states -- Utah, I'm quite sure is one -- that had even lower limits of .05. There are -- other than state law there are other

federal regulations that apply to alcohol versus legal intoxication by some agencies.

MR. COLE: Your Honor, I would ask the court to take judicial notice...

THE COURT: Before you do that, Mr. Cole, approach the bench don't ask in the presence of the jury about these things first.

(Whispered bench conference as follows:)

THE COURT: Mr. Cole.

MR. COLE: Well, first of all, Your Honor, obviously this is a Coast Guard regulation that deals with administrative problems that just links it through the vehicle (indiscernible - whispering). That's what it's for.

(Indiscernible - whispering) it necessarily involve the penalties of a DWI.

Secondly, it's totally irrelevant. The question here DWI has to be (indiscernible - whispering) because that's (indiscernible - whispering) relevant...

THE COURT: No, sir. He's been charged with being under the influence. He hasn't been charged with operating while (indiscernible - whispering).

MR. MADSON: Well, he might have (indiscernible - whispering).

THE COURT: Well...

MR. MADSON: Certainly the .04 under state law is not in evidence. It's a difference you weren't intoxicated.

THE COURT: Mr. Cole, under state law operating with an .05 or less it's a good assumption that the person is not under the influence liquor. Are you aware of that?

MR. COLE: Yes.

THE COURT: Okay. And you're charging this person with a state law violation, Mr. Cole?

MR. COLE: Yes.

MR. MADSON: Under which theory?

MR. COLE: Well, I think we can argue both theories. I don't think Captain Hazelwood (indiscernible - whispering) charged with (indiscernible - whispering).

THE COURT: Is the charge to be (indiscernible - whispering) driving while under the influence of intoxicating liquor. That's been the charge. Not by operating at .010, because there was no test taken.

MR. COLE: Yes, there was. And that's why he's gonna talk about that coming up. And e was over .10 and that was (indiscernible - whispering).

(End of whispered bench conference.)

(2120)

THE COURT: Step back. Court will not be taking judicial notice as requested on the grounds of relevance, also for inadequate foundation.

Q (Mr. Prouty by Mr. Cole:) Now, Mr. Prouty, we talked about the significance of a .061. In your studies when you were working and doing these studies, your own personal studies, did you notice a degree of impairment at levels below, say, for instance a .08?

A Well, certainly I did. In many people.

Q Would you explain that?

A Yes. The alcohol, again, is a progressive central nervous system depressant and my studies have disclosed that when people are tested using very refined methods, such as using divided attention tasks, where you -- instead of giving the individual -- challenging the individual with one task, you challenge them with two tasks simultaneously. That they frequently will demonstrate impairment, that is, make mistakes and take longer to take the action that they decide to take at blood alcohol concentrations far below 1.0 [sic], or far below .08.

This work has been clearly demonstrated in --

and reported in the scientific literature by others that blood -- alcohol never makes a person perform better as far as a motor vehicle operator.

Many people may not manifest any outward overt signs of intoxication until they reach levels of around 03, 04, 05. But that doesn't mean, necessarily, they are not impaired as motor vehicle operators. It's only on refined testing that one may be able to demonstrate impairment at those levels.

But, some people, it's been the results of my studies, as well it's been documented by many others that some people are more sensitive to alcohol to others. That is, the individual will demonstrate overt signs of intoxication, frank signs of intoxication at blood alcohol concentrations of .04 or .05, whereas other seem to have the acquired ability of masking the clinical manifestations at that same blood alcohol concentration, and may not appear to be intoxicated until they reach higher blood levels. But, based upon the testing that I have done, which, as again, has been corroborated by many, many other investigators, that in my opinion all

people are markedly impaired as motor vehicle operators at a .08. Some people very definitely are impaired at concentrations far below that.

Q In your opinion does the extent of impairment relate at all to the complexity of the task at hand?

A Well, certainly it does. This has been the reason why committees such as ours, that is the National Safety Council Committee on Alcohol and Drugs, have over the past years have made varying recommendations depending upon the 1, is the state of the art, that is the state of the research. And 2, is upon the magnitude of the problem,I mean, as to what the task is that's being performed.

Q Now, turning to the area of the elimination rate of alcohol of the body, is alcohol removed from the body immediately, or over a period of time?

A For all the alcohol is to be eliminated it takes a considerable amount of time. But it should be understood that as soon as the alcohol gets into the blood the body initiates the steps of getting rid of it. In other words, it doesn't wait until all of the alcohol is in and now it

says, let's get rid of the alcohol.

Elimination is really taking place as soon as it's absorbed, but it takes time is the big factor to get rid of it.

Q Have there been studies made and reported in the scientific literature as to the rate of this elimination of alcohol from the body?

A Yes. There have.

Q Have you performed studies on the rate of elimination from the body?

A Yes, sir. I've made these observations myself.

Q And are these the studies that we've talked about earlier that you were involved in?

A Yes. These were done during the course of the drinking experiments. And the individuals were tested after the drinking experiment was completed. Blood and breath samples were collected in many of these cases for periods as long as six to eight hours after drinking had ceased, and measured frequently over this time course to monitor the rate of decrease of alcohol from their blood.

Q Now, do all people eliminate alcohol at the same rate?

A No. They don't.

Q What have your studies shown as far as the elimination rates of alcohol among people that you've tested?

A Well, the divulged a number of things. One is I had determined an average rate and a lower and upper limit for this. But, I've also observed that this rate of elimination can even vary within the same individual under different circumstances...

Q Would you...

A ...as well as vary from one person to the other person.

Q What is the average that you observed in the studies that you conducted, elimination rate? What is the average elimination rate?

A The average rate of elimination from my studies is 0.0018 percent per hour.

Q Is that 0018, or 018?

A Well, it's 0 -- it's 0.018 percent per hour. That is the average.

Q You said your average was .018, is that correct?

A Percent per hour, yes.

Q Percent per hour. We'll just assume that.

What was the high that you found?

A In the group of people I studied that the high was 0.03. That's the very upper limit.

Q And what was the low?

A The low in my studies was 0.01.

Q Have you been called upon to testify in the past concerning that calculation, or retrograde extrapolation?

A Yes. I have.

Q And when you testify, what elimination rate do you use?

A What I do as a matter of practice based upon the variants that I do see among individuals, and possibly within the same individual is recognizing that 95 percent of a given population of people will fall within this range, that is .01 to .03, that I will use for my calculations a value even 20 percent below that of the .01. In other words, I use an elimination rate of .008.

Q Well, if 90 percent falls outside of .008, why do you use a .008?

A Well, actually, no. Make that clear, that 95 percent of them will fall within the .01 to .03.

The reason I use a value even lower than this lower rate is to give every

reasonable benefit possible -- it's a 20 percent cut, if you please, on the low value. So, 20 percent of .01 is .002. So, I subtract that from .01 to get my value of point .008.

The reason for this is that any error that would be made in using this to make such an estimate of a blood alcohol concentration at some earlier time will grossly -- it'll tend to grossly underestimate that value.

Q Now, what percentage of the people that you tested fell under the average rate?

A On statistical calculations you have a normal bell shaped distribution curve. And 66-2/3 percent would fall into that .018 and the other remaining would fall into the two extreme areas.

Keeping in mind that 95 out of 100 of them will be between the 01 and the 03.

Q Now, the results that you've talked about, are they consistent with the medical information that's available in the scientific community?

A Yes, sir. It is.

Q Can you as a forensic toxicologist, based on your training and experience, your personal studies, and your knowledge of the scientific literature, with the knowledge of a given blood

alcohol content at a given time estimate an individual's blood alcohol content at some time earlier?

A Yes. If certain information is provided as a predicate for such an estimate.

Q What are the limitations on such a BAC calculations?

A Well, I don't know if you look at it as a limitation, but possibly that's correct. It's a constraint that the primary concern must be that the individual must be in the -- what we call the elimination phase of his blood alcohol curve.

I could best demonstrate that, I think, graphically, Your Honor, if...

Q Sure. Maybe you could just do it right here on the corner of this. Here's a pen. You might even be able to...

A If one could visualize graphically what happens when a person drinks (pause) that at zero time, when a person has not consumed any alcohol, obviously, the BAC would be zero.

And, then, as alcohol comes into the body at a rate that exceeds the body's ability to get rid of it, keeping in mind that some of this alcohol has immediately started to be eliminated as soon

as it comes in, but if it comes in at a rate that exceeds the body's rate of getting rid of it, then alcohol will accumulate in the blood and you develop a blood alcohol concentration.

So, with time that blood alcohol concentration will rise until now, no more alcohol is coming in and now that blood alcohol concentration at some point in time out here, once again, reaches zero. That is to say it goes up, it peaks, and then it comes down, because anywhere on this side of this curve the body is -- there's no more alcohol coming in, or if it's coming it, it's coming in at a rate that is far less than what the body's ability is to get rid of it. In other words, its presence is insignificant.

So, if one were to have a point in time, here, where the blood alcohol concentration is determined, or measured, or blood is collected and subsequently analyzed, and if one wishes to estimate what the blood alcohol concentration was at some time previous, that is, to go back in time, one would go up this curve to the point in time and make an estimate that this was the blood alcohol concentration at some time earlier.

Now, it should be emphasized that in order to

do such a back calculation it is very important to be assured that all of the alcohol that has been consumed is now in the body and is circulating in the blood throughout the body. And no more alcohol is coming in. And that puts you on what we call the elimination phase of the curve.

So, this is the major consideration that one has to keep in mind before one can make a back calculation.

Q You can resume your seat there. Mr. Prouty, you indicated that you can estimate a person's blood alcohol content at an earlier time if you had certain information and facts. What type of information and facts do you need?

A Well, again, as I have emphasized, the most important fact is to be assured that no more alcohol is coming in. And in order to reach that assurance it's desirability to know what the individual's body size, body weight/height is. It's important to consider what the person was drinking, that is when they started drinking, what type beverages they were drinking, and when they stopped drinking.

And, it's also useful under some circumstances

to know what the person had been eating immediately prior to, or at the time that the alcohol was consumed.

Q Assuming that Captain Hazelwood weighs approximately 170 pounds and stands about six foot, now, if he stopped drinking at 8 p.m. -- well, stopped drinking at 8 p.m. and his blood alcohol concentration was .06 at 10:30 the next morning, what would his blood alcohol concentration have been at 12:05 a.m. that morning?

A It would have been approximately a 0.14 percent weight volume. That's using the 20 percent factor, if you please on the .01. That's using an elimination rate of 0.08 percent per hour.

Q Now, that would have been under your analysis at what -- what would it have been, again?

A At 12:05? Approximately 0.14.

Q Point...

A 0.14.

Q And under your analysis, what would the average person that you saw in your studies...

A Using the 0.018 would be approximately 0.25.

Q And the low?

A Using the 0.01 percent per hour elimination

rate it would be approximately 0.17.

Q And the high?

A At the high value of .03 percent per hour elimination would be 0.37, or 38.

Q And at what time would this level have been above a .10?

A Well, it would depend on which elimination rate you were using.

Q Okay. At the -- at your personal rate, the rate that you use?

A At -- using the rate of elimination of 0.08 percent per hour the BAC at approximately 4:30 a.m. would be just in excess of a .10. The calculated value I have is 0.104.

Q And at the low?

A At the low -- that's -- the 01?

Q Uh-huh (affirmative).

A It would be at approximately 5:30.

Q And the average?

A The 018 it would be approximately 8 a.m.

Q And the high?

A Of using the rate of elimination of 0.03 it would be at approximately 9 a.m.

Q Now, why do you cite the different levels of elimination rate among people?

A Because there's no way of -- with great certainty of predicting what any one individual's rate of elimination will be precisely at any one given time.

As I've testified earlier, we do observe different rates of elimination in different peoples, and even some differences in rates of elimination of the same person at different times with their drinking experience.

So, for this reason one must to be with integrity use a range, rather than make an absolute prediction of an absolute number in a given person.

Q Well, if the levels are as you have set them out here, would you expect to see other people observing physical manifestations consistent with these levels of intoxication?

A You mean at the -- at 12 o'clock.

Q At 12 o'clock.

A At 12 o'clock?

The physical observation that one most frequently associates with intoxication is what are frequently referred to as the clinical manifestations. I guess it's all in the eyes of the beholder. It depends on how carefully one

observes someone as to how precisely you may make a reasonable judgment as to whether or not the person's under the influence.

But, it must be remember that physical observation, or visual observation is a very crude means of predicting ethyl alcohol intoxication. That's the reason we have chemical tests. That some people, as I stated earlier, I have seen in my studies, people that can't hit the hat -- hit the floor with their hat at a .06 or 07 blood alcohol. That is to say they are very frankly intoxicated to the most casual observation.

On the other hand, I have had people in my studies -- adults, healthy males, that had blood alcohol concentrations in excess of .20 that did not exhibit clinical manifestations of intoxication. And it was only under the most careful observation and scrutiny that someone would say, yes. I do think he's intoxicated.

Q If these manifestations that you've talked about -- the clinical manifestations were not as observable, would that mean that a person wasn't impaired, or intoxicated?

A Well, certainly not.

Q Why do you say that?

A Well, the alcohol impairment is not based upon what one physically observes, but is what's -- one can scientifically predict as to what the effect of the alcohol will be based upon literally many, many, many, many thousands of studies.

THE COURT: Mr. Cole, we're a little past 1:30. I don't think you're gonna be finished in the next five minutes, are you?

MR. COLE: Actually, I am gonna finish in the next five minutes.

THE COURT: Okay. I think we'll just stick around for another five minutes, then and we'll come back for cross examination.

Q (Mr. Prouty by Mr. Cole:) Are there signs of alcohol impairment that are not as observable as these clinical manifestations that you've discussed?

A Well, yes.

Q Would you explain what those are in relationship to a person's decision making process?

A Well, in progressively alcohol as it's associated with impairment, particularly in

association with motor vehicle operation may be looked at as being in four phases.

One, the first phase would -- as far as motor vehicle operation one has to perceive, or see, in essence a given situation that must be addressed. That is, perception is the first phase.

The second phase is recognition. That is to say you see it as one thing, but if you now mentally recognize this as a task that must be addressed, that is the second phase, recognition of the problem.

And the third phase can be looked at deciding what to do. Or, that is the decision phase.

And the last phase is accomplishing that task. That is to say the fourth phase.

Now, in the first two phases, or even in the first three phases there can be tasks that are presented that demand attention that 1, may not be seen or perceived. And, so, that cannot be evaluated by visual observation of a bystander.

The second phase is the sensory phase, or recognition of this problem, and here, again, you can't look at this person and determine that they now have recognized a problem.

And the third phase is that of decision

making. It can, or can not be observed by the -- the person making the observation, depending on what that decision is. If it's a decision that requires a motor movement, or a task, then it may become obvious.

And, of course, the final phase, if it does involve motor movement, or whatever, and they don't accomplish that task, then it's observable.

Q Finally, this decision making process, could that also be equated with good and bad judgment?

A Well, certainly.

Q And would that be a good indication of whether or not a person was impaired by alcohol?

A It is, yes.

Q Assuming a person has a blood alcohol level of 1.14 or greater, do you have an opinion on whether their reasoning, judgment and decision making would be impaired by alcohol at that time?

A Yes. I do.

Q What is that opinion?

A It's my opinion that they definitely -- these would be impaired.

Q Thank you. I have nothing further.

THE COURT: All right. We'll recess for the day, ladies and gentlemen.

Come back tomorrow at the same time.

Don't discuss the case with anybody, including among yourselves. Don't form or express any opinions, and please remember my instructions regarding media exposure.

We'll see you back tomorrow morning, and be safe.

You may step down.

A Thank you, Your Honor.

(Tape: 3657)

(000)

(Jury not present)

THE COURT: You could get comfortable if you want.

Mr. Cole, you filed an application for a protective order regarding this witness, it sounds like. This is as good a time as any to handle it. Have you got a copy of it, Mr. Madson?

MR. MADSON: Yes, I do.

MR. COLE: I don't have anything further.

MR. MADSON: Well, Your Honor, to me, I don't know as it really needs much in the way of dressing. The state is saying that I cannot ask this witness about certain assumptions he makes and has up there at the board to arrive at those figures. He said the most

important thing is the assumption that no alcohol was ingested, or that the rate of elimination is in the declining phase, rather than absorbing. I certainly think I could cross examine him on his assumptions and what, if anything, would change his calculations. That's certainly, I think, in the proper realm of cross examination. To ask him what his assumptions are based on, and what the results are, and why they assume certain things, and what happens if those assumptions are incorrect.

THE COURT: Mr. Cole.

MR. COLE: Well, he definitely can go into his assumptions. There's no doubt about that, and we're not contesting that. But to throw hypotheticals of, well, what if somebody had a drink at 1 o'clock, or at 1:00 a.m. in the morning, and what if someone had a drink at 3 o'clock in the morning, and what if someone had a drink at 5 o'clock in the morning, are not supported by the facts and do not add, and go merely to confusing the jury.

I believe that's what the purpose of the language in Evidence Rule 703 talks about.

I think that it's got to be some type of evidence that is within the realm of possibility, and to do otherwise just confuses the issues in this

matter.

THE COURT: Okay. I think it is within the realm of possiblity. There has been evidence that Captain Hazelwood showed no signs of impairment at the time or right near the time of the grounding. It wasn't until sometime after that that people smelled alocohol on his breath.

I think inferences from that could be argued that he was not under the influence at that time, and perhaps didn't start drinking until afterwards. And I make that statement, to remind you, I say "inference". It's an argument to be made.

Your case you cite was a civil case, not a criminal case, and I think it would unduly restrict cross examination to prevent the defendant from asking the witness hypothetical questions based upon possibilities in this case. So your motion for protective order is denied.

Is there anything else we can do before we...

MS. HENRY: Your Honor, there are a couple stipulations regarding exhibits, but there is going to be argument as to relevancy, I believe, of some of those exhibits. And that should be taken up at some point. There is also a request by an attorney for a witness that that be taken up in-camera. If you would

like me to approach the bench with counsel, I could explain that in a little more detail.

THE COURT: A witness wishes to have this taken up in-camera?

MS. HENRY: Yes.

THE COURT: All right.

(Whispered bench conference as follows:)

MS. HENRY: One of the documents we are trying to get in is Kagan's personal file.

THE COURT: Not quite so loud.

MS. HENRY: Mr. Kagan's local attorney is Lee Hollen.

THE COURT: Who is it?

MS. HENRY: Lee H-O-L-L-E-N. She requested that that portion of the argument be taken up in-camera. I told her I would advise you of that.

THE COURT: Did she give any reason why?

MS. HENRY: Because of the nature of the files, and she doesn't want the press, I guess, to know what's in the file.

THE COURT: If that's the reason for the in-camera request, and the state's not making the request, it's...

MS. HENRY: I told her I would advise you of her request.

THE COURT: Okay.

MS. HENRY: And she said she would be available to do that at 8:15 tomorrow.

THE COURT: Now, this is for the purpose of laying a foundation to admit these records. What is the purpose...

MS. HENRY: The foundation has been stipulated that they are business records. The issue is whether or not they are relevant, and, also, on behalf of Mr. Kagan, she is opposing them being released in the public record.

THE COURT: Okay. And you have copies of them, also? Okay. Did she give any reasons why? Is there something contained in there that is -- perhaps you should give me a copy of the records and I could make a better determination if an in-camera proceeding would be appropriate.

Why don't I just take a look at them between now and tomorrow morning. I think I won't take a look at all of them, it's just too voluminous for me to get through. Can you notify her and have her come down tomorrow morning and we could take this up at 8:15?

MS. HENRY: All right.

THE COURT: And we'll decide then whether it needs to be in-camera or not. Would there be any

objection if she came into my chambers and presented to me the reasons why she wanted all this in camera. Any objection?

MR. MADSON: No objection.

THE COURT: Okay. Would you ask her to come down to my office at 8:15 tomorrow.

(End of whispered bench conference)

THE COURT: Then there's going to be, I understand, a dispute on the relevance of these documents.

MR. MADSON: Very definitely.

THE COURT: Are there any other documents that are going to be offered that we can resolve now without the incamera question?

MS. HENRY: There's (indiscernible - away from mike) that I stipulated as business records. I don't know if there's going to be an objection to them, other than that.

THE COURT: I take it, Mr. Cole, you only have one other witness and this is it?

MR. COLE: That's it.

THE COURT: As soon as this witness is finished you're closing.

Mr. Madson, here is another one. Why don't you take a look at those at your convenience.

MR. MADSON: This one I can be real quick on. We don't ahve any objection to this. I think stipulated that in.

THE COURT: That's Exhibit 32. It will admitted. You can offer it in fron tof the jury when the time comes. If you want to take a look at those you can and let me know tomorrow morning.

Is there anything else we need to do now, or we can do that will save time? I expect, Mr. Madson, you will be taking some time with this witness on cross?

MR. MADSON: Maybe a half an hour, Your Honor. I'm not going to prolong it.

THE COURT: What's the defense's pleasure. I was hoping we would get done with this witness, as suggested we might be able to so we wouldn't have to call the jury in, just to let them go a half hour later. I'm a little concerned about that.

MR. MADSON: It's very likely that might happen. I don't know about redirect, but let's say an hour at the outside, and the state's last witness.

THE COURT: You will be prepared with your motions?

MR. MADSON: Yes.

THE COURT: What do you figure, a couple hours

for motions?

MR. MADSON: At the most, Your Honor. It's been a long case, but I think the issues are still pretty straight forward.

THE COURT: And then would you be able to -- assuming it was necessary to call your first witness on Thursday morning?

MR. MADSON: Yes.

THE COURT: Would you like the remainder of the day off then, tomorrow, to get prepared?

MR. MADSON: It's conceivable we could start tomorrow. We'd like to go...

THE COURT: Okay. I was doing this to accomodate you at your request earlier. If you don't need it, I'm ready to go, too.

MR. MADSON: We've got people that are coming up from Valdez in anticipation tomorrow, so we need to get them on.

THE COURT: We'll just hold the jury in the jury room during the motions, and depending on the outcome, bring the jury back in. Anything else we can do?

MR. MADSON: No.

THE COURT: WE'll stand in recess.

THE CLERK: Please rise. This court stands in

recess subject to call.

(332)

(Off record - 1:45 p.m.)

CONTINUED