

UNITED STATES OF AMERICA  
NATIONAL TRANSPORTATION SAFETY BOARD  
OFFICE OF MARINE SAFETY

**SS NORWAY ENGINEERING GROUP  
MAJOR MARINE ACCIDENT  
DCA 03 MM 032  
INVESTIGATIVE INTERVIEWS**

INVESTIGATIVE INTERVIEW OF:  
TROND KRISTENSEN  
2nd Engineer, SS Norway

~~Friday~~Wednesday, June ~~6~~4, 2003

In Attendance:

TOM ROTH-ROFFY, NTSB  
BRIAN CURTIS, NTSB  
CHRIS FOONG, NCL  
CHRIS OELSCHLEGEL, USCG  
KEN OLSEN, USCG  
ERIK LASALLE, USCG  
JOHN RILEY, NCL CONSULTANT  
RICHARD LEHRER, ESQ.

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

1  
2 MR. ROTH-ROFFY: We're investigating  
3 transportation accidents in the United States.

4 The purpose of our investigation is to  
5 determine the cause of the accident and, if possible,  
6 and then to make recommendations aimed at preventing  
7 similar future accidents.

8 Our investigation is strictly a safety  
9 investigation, not a legal investigation. We have no  
10 interest in assigning blame or -- or guilt to any  
11 person or company.

12 The reason we've called you here this  
13 afternoon is that we believe that you may have some  
14 information that -- that may be useful in our  
15 investigation, and we appreciate you coming down and  
16 talking with us.

17 What I'd like to do now is to ask each person  
18 in the room that's going to be participating to  
19 introduce themselves, please, and -- and their  
20 affiliation.

21 MR. LASALLE: Lt. Erik Lasalle. I'm a senior  
22 investigating officer with the Marine Safety Office,  
23 Miami, U.S. Coast Guard.

24 MR. CURTIS: I'm Brian Curtis with the NTSB,  
25 Marine Engineering Accident Investigator.

26 MR. OLSEN: My name's Ken Olsen. I work out  
27 of D.C., Washington, D.C., Office of Investigations and  
28 Analysis.

29 MR. OELSCHLEGEL: Chris Oelschlegel, United  
30 States Coast Guard, Washington, D.C.

31 MR. RILEY: John Riley, Marine Surveyor,  
32 working for NCL.

33 MR. FOONG: Chris Foong, NCL.

34 MR. ROTH-ROFFY: Okay. That's everybody.

35 The way we've been working it is I will begin  
36 asking questions and then each person in turn will ask  
37 a series of questions. When everybody's had a chance  
38 to ask questions, then we'll go around again.  
39 Hopefully we won't be too long, but we appreciate you  
40 coming down, and let's go ahead and begin with, if you  
41 would, try to recall back to the day of the accident,  
42 Sunday morning, and please describe in as much detail  
43 as you can what happened from the time you awoke on  
44 Sunday morning.

45 MR. KRISTENSEN: Awoke from the alarm sound?

46 MR. ROTH-ROFFY: Yeah. You know, tell us  
47 whether you were sleeping or awake or whatever and then  
48 from the time -- from that time all the way until the  
49 emergency was over and please be as -- provide as much

1 detail as you can, you know. If somebody told you  
2 something, we'd like to hear about it. If you saw  
3 something or if you heard something or if you  
4 instructed somebody to do something, please tell us  
5 about that.

6 Go ahead and start.

7 MR. KRISTENSEN: I wake up and the alarm  
8 sound. I don't remember what time it is. So, 7:30,  
9 probably something like that. I don't remember that.  
10 I go down to my post when we have this Code Bravo in  
11 the forward engine room and there we had both the  
12 engineers on the diesel engines to start up emergency  
13 generators. We had to start Generator Number 12. I  
14 was having a bit of a problem with the pumps but not a  
15 big problem. After that, we start another one. So,  
16 I'm waiting till we get it started and after that, the  
17 captain advised us to abandon ship. Everybody was in  
18 the lifeboats. After that they go, and after that, I  
19 go and get some information and that's it.

20 MR. ROTH-ROFFY: I'm sorry. Could you say  
21 that last part again?

22 MR. KRISTENSEN: We go up to this -- the  
23 captain said everybody off to the lifeboat deck because  
24 they want to check how many people, and I go up there  
25 and after awhile, they say to go back for some  
26 information, captain information, from the crew officer  
27 to tell us what happened, and after that, I got off the  
28 boat.

29 MR. ROTH-ROFFY: Okay. I -- I -- for the  
30 record, I forgot to introduce you. You are Trond Eric  
31 Kristensen, the 2nd engineer on the Norway.

32 MR. KRISTENSEN: That's correct.

33 MR. ROTH-ROFFY: I apologize.

34 So, you say you were sleeping.

35 MR. KRISTENSEN: At that time, I was  
36 sleeping. I was just speaking to my wife and family on  
37 the telephone and go to sleep maybe 5:00, and I wake up  
38 and I hear this Code Bravo and I actually wake up a  
39 little bit before. I was very, very tired -- tired at  
40 that time. I really don't understand what happened,  
41 and I think it was -- I don't know what it is.

42 MR. ROTH-ROFFY: Which watch did you have?

43 MR. KRISTENSEN: 12 to 4.

44 MR. ROTH-ROFFY: 12 to 4. In the morning?

45 MR. KRISTENSEN: Yes.

46 MR. ROTH-ROFFY: And after watch, you went to  
47 call your wife. Where did you go to call your wife?

48 MR. KRISTENSEN: The mechanical room on the  
49 cell phone.

1                   MR. ROTH-ROFFY: Cell phone. After watch,  
2 you spoke to your wife for a little while and laid down  
3 to sleep.

4                   MR. KRISTENSEN: I think 5:00, I was asleep.  
5                   MR. ROTH-ROFFY: 5:00.  
6                   MR. KRISTENSEN: Something like that.  
7                   MR. ROTH-ROFFY: And you were awoken by the  
8 alarm?

9                   MR. KRISTENSEN: Yes.  
10                  MR. ROTH-ROFFY: And when you were awoken,  
11 did you -- were the lights out already?  
12                  MR. KRISTENSEN: When I awoke, maybe two-  
13 three minutes before the lights go. I don't remember,  
14 but when I woke -- when I wake up, there was light and  
15 I see the light go away, I think okay, it's a black-out  
16 or something happened.

17                  MR. ROTH-ROFFY: Okay. And then, you went --  
18 after you woke up, you -- you put your coveralls on and  
19 --

20                  MR. KRISTENSEN: Went to the forward engine  
21 room.

22                  MR. ROTH-ROFFY: Which stairs?  
23                  MR. KRISTENSEN: The forward engine. I come  
24 directly to my post.

25                  MR. ROTH-ROFFY: In the forward engine room?  
26                  MR. KRISTENSEN: Yes, sir.  
27                  MR. ROTH-ROFFY: And did you see anybody as  
28 you were going down? Who did you see?  
29                  MR. KRISTENSEN: When I come down, I see the  
30 second engineer who was in charge for the diesel  
31 engines.

32                  MR. ROTH-ROFFY: And who was that?  
33                  MR. KRISTENSEN: I think his name is  
34 Osterlund.

35                  MR. ROTH-ROFFY: Osterlund?  
36                  MR. KRISTENSEN: Osterlund.  
37                  MR. ROTH-ROFFY: Osterlund?  
38                  MR. KRISTENSEN: Osterlund, I think. I'm not  
39 sure. We always call him Pecka. Everybody know him,  
40 his name is Pecka.

41                  MR. ROTH-ROFFY: Ecker?  
42                  MR. KRISTENSEN: Pecka.  
43                  MR. ROTH-ROFFY: Pecka.  
44                  MR. KRISTENSEN: Yeah. But Osterlund is his  
45 last name.

46                  MR. ROTH-ROFFY: Okay. Maybe we could get  
47 the spelling on that.  
48                  MR. KRISTENSEN: The last name is  
49 Osterlund with an AO. But maybe he's -- last name is

1 spelled O-S-T-E-R-L-U-N-D. The first name is Karl with  
2 a K, K-A-R-L, Erik, E-R-I-K. He's the first engineer.  
3 MR. ROTH-ROFFY: Mr. Osterlund is -- is a  
4 first engineer on the ship?  
5 MR. KRISTENSEN: At that time, he was second  
6 engineer. He had been the first engineer.  
7 MR. ROTH-ROFFY: He's been promoted --  
8 MR. KRISTENSEN: Yes.  
9 MR. ROTH-ROFFY: -- since the explosion?  
10 MR. KRISTENSEN: He was -- I think he should  
11 be before explosion, but because Mr. Anvik should go  
12 home this Sunday, so it should be home.  
13 MR. ROTH-ROFFY: He's relieving Mr. Anvik?  
14 MR. KRISTENSEN: Yeah.  
15 MR. ROTH-ROFFY: And what did Mr. Osterlund  
16 tell you, if anything?  
17 MR. KRISTENSEN: He was speaking about the  
18 explosion.  
19 MR. ROTH-ROFFY: Did he say where?  
20 MR. KRISTENSEN: Everybody understand it was  
21 in the boiler room.  
22 MR. ROTH-ROFFY: And then, did Mr. Osterlund  
23 direct you to start up Number 12 generator or?  
24 MR. KRISTENSEN: It's his job to start up  
25 this, but I helped him do that.  
26 MR. ROTH-ROFFY: Oh, it's his job to start  
27 it, but you helped him?  
28 MR. KRISTENSEN: I should have been. So, he  
29 don't say anything to me, but we start it together.  
30 MR. ROTH-ROFFY: Okay.  
31 MR. KRISTENSEN: So, I helped him because I  
32 know what I'm doing. I work in the forward engine  
33 room. I should help him.  
34 MR. ROTH-ROFFY: Okay. At any time, did you  
35 see any injured crew members?  
36 MR. KRISTENSEN: No, I never seen nobody.  
37 MR. ROTH-ROFFY: Any time during the morning,  
38 did you go into the control room, engine control room?  
39 MR. KRISTENSEN: No.  
40 MR. ROTH-ROFFY: At any time during that  
41 morning, did you go down to the boiler room?  
42 MR. KRISTENSEN: I go down to the boiler room  
43 after lunch maybe.  
44 MR. ROTH-ROFFY: After lunch was the first  
45 time?  
46 MR. KRISTENSEN: Yeah. At the start of this  
47 vessel. Already some firefighters from Miami.  
48 MR. ROTH-ROFFY: When you went down there  
49 after lunch, what did you do?

1 MR. KRISTENSEN: Looking for some pipes broke  
2 for the start of this, the air compressor, like air for  
3 air condition, stuff like that.  
4 MR. ROTH-ROFFY: What pressure air?  
5 MR. KRISTENSEN: Should be 7 to 8. I don't  
6 know what the pressure was at that time.  
7 MR. ROTH-ROFFY: Right. And did you find --  
8 did you find any leaks?  
9 MR. KRISTENSEN: I see this leak, but Erik  
10 did them, I was too scared to go because of the water.  
11 It is deep and everything.  
12 MR. ROTH-ROFFY: Did you -- did you make any  
13 adjustments or --  
14 MR. KRISTENSEN: No, no.  
15 MR. ROTH-ROFFY: -- close any valves?  
16 MR. KRISTENSEN: No. Did not touch anything.  
17 MR. ROTH-ROFFY: Nothing in the boiler room,  
18 did you -- did you adjust or anything?  
19 MR. KRISTENSEN: No, no. No, no.  
20 Can we take a break?  
21 MR. ROTH-ROFFY: Sure. It's -- we'll take  
22 about five minutes, 10 minutes?  
23 MR. KRISTENSEN: Yeah.  
24 MR. ROTH-ROFFY: Okay.  
25 (Whereupon, a recess was taken.)  
26 MR. ROTH-ROFFY: Okay. It's about 20 minutes  
27 after 3. We took about a five-minute break there.  
28 If at any time you need a break, just -- no  
29 problem. Just let me know and we'll break.  
30 MR. KRISTENSEN: Okay.  
31 MR. ROTH-ROFFY: You said you went into the  
32 boiler room. Did you go all the way down to the lower  
33 level?  
34 MR. KRISTENSEN: Yes.  
35 MR. ROTH-ROFFY: And did you -- you heard oil  
36 -- I'm sorry -- air leaking?  
37 MR. KRISTENSEN: Yes, air leaking. I hear  
38 air leaking.  
39 MR. ROTH-ROFFY: You heard it or you saw it?  
40 MR. KRISTENSEN: I hear it.  
41 MR. ROTH-ROFFY: Okay. Did you locate where  
42 it was leaking or not?  
43 MR. KRISTENSEN: I think the leaking was in  
44 the fuel meter pump on the far side.  
45 MR. ROTH-ROFFY: Okay. And -- but you didn't  
46 want to go out there to -- to --  
47 MR. KRISTENSEN: No. It was too dangerous.  
48 MR. ROTH-ROFFY: It was pretty dark, too,  
49 wasn't it?

1 MR. KRISTENSEN: Yes.  
2 MR. ROTH-ROFFY: And how -- how high was the  
3 bilge water level? Do you remember?  
4 MR. KRISTENSEN: I wasn't looking at the  
5 bilge level. So, I don't remember.  
6 MR. ROTH-ROFFY: Okay. During the morning,  
7 did anybody talk to you about the explosion, about what  
8 might have caused it?  
9 MR. KRISTENSEN: After they have started  
10 diesel engines?  
11 MR. ROTH-ROFFY: Right.  
12 MR. KRISTENSEN: Started to speak about what  
13 happened, what actually happened.  
14 MR. ROTH-ROFFY: Did anybody give you any  
15 information about what happened?  
16 MR. KRISTENSEN: Mr. Kongeon came first and  
17 with a comment.  
18 MR. ROTH-ROFFY: Mr. Who?  
19 MR. KRISTENSEN: Kongeon, Andrus Kongeon.  
20 MR. ROTH-ROFFY: Okay. Is he an engineer?  
21 MR. KRISTENSEN: He's a second engineer.  
22 PARTICIPANT: K-O-N-G?  
23 PARTICIPANT: E-O-N. First name is Andrus,  
24 A-N-D-R-U-S.  
25 MR. ROTH-ROFFY: Okay. And what did they  
26 tell you?  
27 MR. KRISTENSEN: That they made -- he tell me  
28 that Roussard, the third engineer, was -- his face was  
29 burnt off him. That's what he told me. I asked him,  
30 "Did the boiler explode?" He said, "Yes, I think so."  
31 That's what we were talking about.  
32 MR. ROTH-ROFFY: Okay. Okay. I think that's  
33 about all I have on his activities, you know, that  
34 morning.  
35 Does anybody have any -- need any  
36 clarifications on any of the stuff he's mentioned?  
37 (No response)  
38 MR. ROTH-ROFFY: Okay. What I'd like to do  
39 now is to proceed and talk about your duties and  
40 responsibilities on the Norway. You've said that you  
41 stand the 12 to 4 watch.  
42 Could you tell us what your watch duties are,  
43 please? What your responsibilities are?  
44 MR. KRISTENSEN: Yeah. We are normally --  
45 the watch was with the second engineer and the third  
46 engineer and the stoker and the wolfman and forward  
47 watch man on that watch.  
48 So, I go every second day to the control room  
49 as I'm second engineer. So, at that time, it was my

1 tour to be in the control room, and we have this -- I'm  
2 to stand by for -- and about 2:00, I went off on break  
3 because other technician is there. So, he relieved me  
4 up there. I went down to stop the evaporator in the  
5 aft engine room.

6 MR. ROTH-ROFFY: Could you say that again?  
7 You relieved the evaporator?

8 MR. KRISTENSEN: No, no, no. The other  
9 second engineer come in control room and take over my  
10 watch in the control room and I go down to stop the  
11 evaporator.

12 MR. ROTH-ROFFY: To stop the evaporator?

13 MR. KRISTENSEN: Yes, that's true.

14 MR. ROTH-ROFFY: Okay.

15 MR. KRISTENSEN: Stop that.

16 MR. ROTH-ROFFY: Okay. And that was on your  
17 -- your 12 to 4 watch?

18 MR. KRISTENSEN: That was about 2:00.

19 MR. ROTH-ROFFY: 2:00.

20 MR. KRISTENSEN: I think I'm finished 45  
21 minutes after that, go back to the control room, and  
22 the other second engineer go down there, and I have  
23 this wake-up call for the chief engineer and step chief  
24 and the first engineer. They should be down there on  
25 the standby. They come down to the control room, I  
26 think, about quarter past 3, something like that.

27 MR. ROTH-ROFFY: How many evaporators did you  
28 secure? Was it one or more?

29 MR. KRISTENSEN: Two of them.

30 MR. ROTH-ROFFY: And did they have numbers?

31 MR. KRISTENSEN: Yeah. 21 and 22.

32 MR. ROTH-ROFFY: What were the names of the  
33 engineers on watch with you? Did you say there was a  
34 second and a third?

35 MR. KRISTENSEN: One is Pedersen, he's the  
36 second engineer, and the third engineer is a Filipino  
37 guy. His name is Perez or something like that. We  
38 always call him Perez. I'm not so good with Filipino  
39 names.

40 MR. ROTH-ROFFY: Okay. So, you and Pedersen  
41 every two days would alternate?

42 MR. KRISTENSEN: Yeah.

43 MR. ROTH-ROFFY: And you had been -- it was  
44 your turn to be in the control room. Was that your  
45 first time -- the first day in the control room or your  
46 second day in the control room?

47 MR. KRISTENSEN: Be the first watch on that  
48 Saturday -- that Sunday. I'm sorry. So, we -- we  
49 changed. I -- I go to 12 midnight after 4 in the



1 night, and the next time I go down is 12 lunchtime and  
2 4 in the afternoon, and the next time I go down is 12  
3 midnight and go down in the engine room. Pedersen will  
4 be in control room.

5 MR. ROTH-ROFFY: So, it's actually the two  
6 watches then rather than two days that you --

7 MR. KRISTENSEN: We change it, because it's  
8 very important in the control room, so we changed it.

9 MR. ROTH-ROFFY: But is it every two days or  
10 every two watches?

11 MR. KRISTENSEN: Every two days. Every  
12 second day. So, we have two watches in the control  
13 room and two watches in the engine room and two watches  
14 in the control room and like that all the time.

15 MR. ROTH-ROFFY: Okay.

16 MR. KRISTENSEN: We like to do that.

17 MR. ROTH-ROFFY: Sure. Do most watches do  
18 the same thing, rotate the engineers?

19 MR. KRISTENSEN: Yeah. They used to -- they  
20 used to do that, yes.

21 MR. ROTH-ROFFY: Okay. And you say you've  
22 been on the Norway for three weeks?

23 MR. KRISTENSEN: I come aboard 4th of May, I  
24 think it was.

25 MR. ROTH-ROFFY: And have you worked on the  
26 Norway before?

27 MR. KRISTENSEN: Oh, yes. I started in March  
28 '99.

29 MR. ROTH-ROFFY: And how about -- how long  
30 have you been with Norwegian Cruise Lines?

31 MR. KRISTENSEN: Since March '99.

32 MR. ROTH-ROFFY: That was your first trip  
33 with NCL?

34 MR. KRISTENSEN: Yes.

35 MR. ROTH-ROFFY: While we're going that way,  
36 why don't you go ahead and describe your -- your  
37 background in the marine industry, when you started  
38 going to sea, and where you got your education?

39 MR. KRISTENSEN: I got my education in  
40 Norway. I -- my first time to sea on the ship was in  
41 -- in -- I only worked five years, started in 1998,  
42 first time I worked on a ship. That's when I started  
43 on a ship.

44 MR. ROTH-ROFFY: And where did you get your  
45 -- your maritime education or training?

46 MR. KRISTENSEN: In Norway.

47 MR. ROTH-ROFFY: Is there a particular school  
48 or college or university or?

49 MR. KRISTENSEN: I don't know, but it's --

1 it's like a college.  
2 MR. ROTH-ROFFY: And what license do you  
3 hold?  
4 MR. KRISTENSEN: I hold a first engineer's  
5 license on steam and second engineer's license on  
6 motor, but I have the school for the chief engineer.  
7 MR. ROTH-ROFFY: You have the what?  
8 MR. KRISTENSEN: I have the school to be a  
9 chief engineer, but at this time, I only have first  
10 engineer's license on steam and second engineer's  
11 license on the motor, diesel.  
12 MR. ROTH-ROFFY: How long is the school for  
13 chief engineer?  
14 MR. KRISTENSEN: It changed from the time,  
15 but at that time, it was four years of school and you  
16 went to work for at least 30 months at that time, but  
17 they changed all that. It's four years of school and  
18 they took -- I'm not sure. Some months on the drydock  
19 and -- and at least six months as a trainee on a ship.  
20 MR. ROTH-ROFFY: That's for chief engineer?  
21 MR. KRISTENSEN: No, no, no. That's to get  
22 the first license.  
23 MR. ROTH-ROFFY: Okay. I'm sorry. I  
24 misunderstood you.  
25 MR. KRISTENSEN: First.  
26 MR. ROTH-ROFFY: Okay. You mentioned that  
27 you have the first steam, second motor, but you have  
28 the chief engineer school.  
29 MR. KRISTENSEN: Yeah. I went to school to  
30 -- to take a license as a chief engineer.  
31 MR. ROTH-ROFFY: Okay. How long is that  
32 school?  
33 MR. KRISTENSEN: It's one year or 10 months.  
34 MR. ROTH-ROFFY: And is that the same school  
35 that you went to for your original license?  
36 MR. KRISTENSEN: I go -- they call it WEK3.  
37 That's the same as chief engineer school and before  
38 that, I went to WEK2. That's to get the license in  
39 Class 4, the lowest license, and before that, you have  
40 some practical school, too, on motors and stuff like  
41 that.  
42 MR. ROTH-ROFFY: Right. Okay. What is your  
43 responsibility, which equipment are you responsible for  
44 in the Norway on this trip?  
45 MR. KRISTENSEN: On this trip, I was  
46 responsible for the boiler treatments.  
47 MR. ROTH-ROFFY: Is there anything else  
48 you're responsible for?  
49 MR. KRISTENSEN: On that time, I was

1 responsible for the boiler treatments, should take  
2 tests of the boiler water every day, and I was  
3 responsible for the oil store and the temperature  
4 store.

5 MR. ROTH-ROFFY: Which -- you mean lubricant  
6 -- bulk lubricating oil or which oil?

7 MR. KRISTENSEN: Freeze and other  
8 lubricating.

9 MR. ROTH-ROFFY: And the big tanks, too?

10 MR. KRISTENSEN: No, no, no. I only the  
11 drums, drums. I was supposed to order what I need and  
12 give the appropriate papers to the chief engineer.

13 MR. ROTH-ROFFY: Okay. Did you also test the  
14 water on the diesel generators?

15 MR. KRISTENSEN: Yeah, yeah, yeah. Once a  
16 week. Diesel generators and emergency generators, just  
17 general, and low-pressure system on the generators,  
18 test that once a week. Usually Friday or Saturday.

19 MR. ROTH-ROFFY: So, did you do all the  
20 chemical treatment of all the water systems?

21 MR. KRISTENSEN: Yeah.

22 MR. ROTH-ROFFY: When do you normally test  
23 the boiler water?

24 MR. KRISTENSEN: On midnights.

25 MR. ROTH-ROFFY: Once a day?

26 MR. KRISTENSEN: Once a day.

27 MR. ROTH-ROFFY: And what do you work on  
28 after watch? What -- what sort of maintenance work do  
29 you do?

30 MR. KRISTENSEN: On this, it's not too much  
31 maintenance work to do on this, but I used to make some  
32 checks to the boilers after work and stuff like that  
33 and go check the oil and chemicals. That was it.

34 MR. ROTH-ROFFY: So, on the average, you  
35 worked nine hours a day or eight --

36 MR. KRISTENSEN: Nine hours a day.

37 MR. ROTH-ROFFY: Is that about average for --  
38 for the engineers, the other engineers on the ship, or  
39 do you work more or less?

40 MR. KRISTENSEN: If you're an engineer on  
41 watch, you work mostly 10 hours, if there's nothing  
42 special, of course, but normally it's 10.

43 MR. ROTH-ROFFY: That's the normal for most  
44 of the engineers?

45 MR. KRISTENSEN: Yes. Sometimes, I only work  
46 eight hours.

47 MR. ROTH-ROFFY: Are you involved in  
48 operating the boiler while you're on watch? Would you  
49 light off a boiler?

1 MR. KRISTENSEN: Yeah. I run up the boiler  
2 when on my watch. I used to do that or light on the  
3 boiler.

4 MR. ROTH-ROFFY: Would you ever do that since  
5 you've been on the 12 to 4?

6 MR. KRISTENSEN: No, no. Normally don't do  
7 that on 12 to 4. It's 4 to 8 mostly do that normally.  
8 I don't do that on the 12 to 4 watch.

9 MR. ROTH-ROFFY: Have you stood the 4 to 8  
10 watch on previous contracts?

11 MR. KRISTENSEN: Oh, yeah, many times.

12 MR. ROTH-ROFFY: Could you describe the  
13 procedure that you use for lighting off a boiler?

14 MR. KRISTENSEN: Lighting -- lighting off?

15 MR. ROTH-ROFFY: Correct. Lighting off. You  
16 know, how many -- how many fires you -- how many  
17 burners you light off and what pressure you normally  
18 do.

19 MR. KRISTENSEN: If you want to take a boiler  
20 off line? Is that what you mean?

21 MR. ROTH-ROFFY: No. I'm sorry. To start  
22 it.

23 MR. KRISTENSEN: To start the boiler?

24 MR. ROTH-ROFFY: Correct. From cold.

25 MR. KRISTENSEN: From cold. Yes. Very easy.

26 MR. ROTH-ROFFY: Okay.

27 MR. KRISTENSEN: So, we used to start heating  
28 the boiler when we are in St. Thomas, and we start  
29 about 8:00 in the morning, something like that, and the  
30 stoker open for -- take one of the pump, fuel pump at  
31 high speed and the stoker open for fuel and the steam  
32 to the boilers, and we start the process for eight  
33 hours, eight to nine hours, till we have full pressure.  
34 We do it very slowly. So, I may be lighting every --  
35 I don't -- every five minutes and five minutes, switch  
36 on the burner for five -- five minutes and switch off  
37 10 minutes the first hours. Normally, we should -- we  
38 have 60 bar on the boilers about 6:00 in the evening,  
39 normally.

40 MR. ROTH-ROFFY: Okay. For the -- you say  
41 for the first -- first hours, you do five minutes on,  
42 10 minutes off.

43 MR. KRISTENSEN: Yep.

44 MR. ROTH-ROFFY: How about for later hours?

45 MR. KRISTENSEN: Same thing, same thing, and  
46 when we -- when we have our 10th hour and the boiler's  
47 really hot, we start by 10 minutes on, five minutes  
48 off. It depends on the engineers.

49 MR. ROTH-ROFFY: It differs from engineers?

1 MR. KRISTENSEN: Only small difference. Like  
2 a different man driving a car. Everybody's a little  
3 bit different with everything. But the start-up is  
4 always the same thing. That's the most critical time.  
5 MR. ROTH-ROFFY: Is there a procedure, a  
6 written procedure that -- that guides you in how to  
7 start up a boiler?  
8 MR. KRISTENSEN: Yes.  
9 MR. ROTH-ROFFY: And where -- where is that  
10 located?  
11 MR. KRISTENSEN: It's located in the boiler  
12 room, for example, and we have it up in the control  
13 room, and I guess it's in -- in the messages.  
14 Everything is there.  
15 MR. ROTH-ROFFY: About what pressure, fuel  
16 pressure do you normally fire?  
17 MR. KRISTENSEN: On the --  
18 MR. ROTH-ROFFY: For lighting off?  
19 MR. KRISTENSEN: On the pump, we have about  
20 30 bar.  
21 MR. ROTH-ROFFY: How about to the burner?  
22 MR. KRISTENSEN: 10 bar. 10 to 12 bar, when  
23 we have this lighting process. 10 to 12 bar.  
24 MR. ROTH-ROFFY: And what is the minimum  
25 pressure, fuel pressure that you can run?  
26 MR. KRISTENSEN: I don't remember. I think  
27 it's 6 bar, but I -- 6 bar.  
28 MR. ROTH-ROFFY: You open up the stops before  
29 you get up to full pressure normally or you --  
30 MR. KRISTENSEN: Pardon me?  
31 MR. ROTH-ROFFY: Do you open the main steam  
32 stops before you reach full pressure?  
33 MR. KRISTENSEN: I don't know what you mean.  
34 MR. ROTH-ROFFY: The stop valves.  
35 MR. KRISTENSEN: The main valve?  
36 MR. ROTH-ROFFY: Yeah. Would you open that  
37 before?  
38 MR. KRISTENSEN: When the steam is dry heat  
39 and we have 59-60 pressure on the drum, we open this  
40 main valve.  
41 MR. ROTH-ROFFY: Okay. Now, could you  
42 describe the procedure you use to shut down or turn off  
43 the boiler?  
44 MR. KRISTENSEN: Okay. When we get -- when  
45 we're reducing the main engines and get about on the  
46 fuel flow about 2 megaton an hour, we start to take out  
47 one-by-one of these burners, and we take the first  
48 burner out and we have everything out, I do that. I do  
49 that. I have all the fueling, and we reduce that a

1 little bit step-by-step and then we take up Burner  
2 Number 3, start Burner Number 3, fueling. So, I do the  
3 fuel and then take this Burner Number 4 off. There may  
4 be 10 minutes, 7 to 10 minutes, take it off, and when  
5 we -- when we have one burner on, have only one fan,  
6 just stop the other fans, only one fan running, run at  
7 least two fans on each boiler, and this stoker start  
8 across to the boiler and he knows when it should be  
9 closed and then I take off the last burner and turn off  
10 the last fan to about 20, something to that effect, 15  
11 to 20, and we open the drain for the superheat and the  
12 dissipator. The stoker opens that and closes the spray  
13 water and this superheated steam.

14 MR. ROTH-ROFFY: Sorry?

15 MR. KRISTENSEN: There's a line from the  
16 drums up to there. So, you take off the steam  
17 pressure, take 5 to 6 bar to get above 55 bars when it  
18 closes like this.

19 MR. ROTH-ROFFY: Is that on the top of the  
20 drum?

21 MR. KRISTENSEN: Yes.

22 MR. ROTH-ROFFY: Do you leave the registers  
23 open when you have a push-out fan running? The air  
24 registers around the --

25 MR. KRISTENSEN: No. We close it, then we  
26 shut down the power and close it.

27 MR. ROTH-ROFFY: No, but you say the fan  
28 that's 15 to 20 percent.

29 MR. KRISTENSEN: That's open, of course. The  
30 fan is running, yes. So, we have this screwed on to  
31 the boiler to get it down. After awhile, it stops and  
32 the pressure's about zero and after some hours, it  
33 stops down there. I shut down everything.

34 MR. ROTH-ROFFY: Okay. The fan is running on  
35 -- on low speed --

36 MR. KRISTENSEN: Yes.

37 MR. ROTH-ROFFY: -- with the damper set at 15  
38 to 20 percent?

39 MR. KRISTENSEN: Yes, something like that.

40 MR. ROTH-ROFFY: And are the register veins  
41 open?

42 MR. KRISTENSEN: It's open.

43 MR. ROTH-ROFFY: Okay. Yeah. Otherwise,  
44 they wouldn't get air, right?

45 MR. KRISTENSEN: That's true.

46 MR. ROTH-ROFFY: And then, about how long  
47 does it take to go from 60 bar down to zero?

48 MR. KRISTENSEN: I don't know how to answer  
49 that question. I don't know exactly.

1 MR. ROTH-ROFFY: About 30 minutes or so?  
2 MR. KRISTENSEN: 30 minutes or one hour. One  
3 hour. It depends how much you open and start, how much  
4 open and spray comes from superheater and stuff like  
5 that. Used to open the boiler about 20 minutes, so it  
6 loses a lot of pressure and, of course, the first 20  
7 bar goes very fast, but the other one was much lower.  
8 So, if I say one hour, maybe it's wrong. I don't want  
9 to say anything about it.  
10 MR. ROTH-ROFFY: Yeah. I'm just -- you know,  
11 a rough estimate.  
12 MR. KRISTENSEN: Yeah. One hour. Something.  
13 MR. ROTH-ROFFY: One hour.  
14 MR. KRISTENSEN: One to two hour.  
15 MR. ROTH-ROFFY: Two hours. Okay.  
16 MR. KRISTENSEN: Yeah.  
17 MR. ROTH-ROFFY: One to two hours. That's  
18 fine.  
19 MR. KRISTENSEN: I never think about that.  
20 MR. ROTH-ROFFY: And do you direct the bottom  
21 blow? Do you always bottom blow whenever --  
22 MR. KRISTENSEN: Should always bottom blow.  
23 That's the process.  
24 MR. ROTH-ROFFY: And you get what, a 20-  
25 minute bottom blow?  
26 MR. KRISTENSEN: 20 minutes should be.  
27 MR. ROTH-ROFFY: And then, you're filled --  
28 MR. KRISTENSEN: Refilled. Refilled the  
29 heater. We have then the filled water around this.  
30 It's opened like a crack or something. We fill the  
31 water till we finish the bottom blow and everything,  
32 and the stoker come -- I leave the boiler and the  
33 stoker take over. I keep an eye on the water in the  
34 other room to the boilers that cool down and that  
35 pressure is up.  
36 MR. ROTH-ROFFY: Okay.  
37 MR. KRISTENSEN: I want a smoke.  
38 MR. ROTH-ROFFY: Another break?  
39 MR. KRISTENSEN: Yes.  
40 MR. ROTH-ROFFY: Okay.  
41 (Whereupon, a recess was taken.)  
42 MR. ROTH-ROFFY: Okay. It's about 5 minutes  
43 of 4. We'll go ahead and resume our interview of Mr.  
44 Kristensen.  
45 I think that's all I have for now. I'd like  
46 to go ahead and pass it to Brian.  
47 MR. CURTIS: Brian Curtis.  
48 I believe the chemicals are supplied by Joe  
49 Ashland, is that correct?

1 MR. KRISTENSEN: Yeah.  
2 MR. CURTIS: And how often do they visit the  
3 vessel to review the --  
4 MR. KRISTENSEN: Once a month.  
5 MR. CURTIS: Once a month. Is that the same  
6 rep each time or the same representative each time?  
7 MR. KRISTENSEN: Most of the time, it's the  
8 same but sometimes no.  
9 MR. CURTIS: And does he take copies of your  
10 test results with him each time or does he review them  
11 or what's he do?  
12 MR. KRISTENSEN: He make his own -- he has  
13 his own sheets. So, he make his report and he give the  
14 one copy to me and the one he keeps.  
15 MR. CURTIS: And does he make recommendations  
16 pretty much every month?  
17 MR. KRISTENSEN: He makes them if he have a  
18 little bit too much salt water, he say we should bottom  
19 blow or skim the boilers and things like that.  
20 MR. CURTIS: When was his last visit?  
21 MR. KRISTENSEN: It was actually the same day  
22 I sign on. I don't speak to him.  
23 MR. CURTIS: Oh, you didn't speak with him.  
24 MR. KRISTENSEN: I don't see him.  
25 MR. CURTIS: Recently, what was the frequency  
26 that you had to blow the boiler down? How frequently  
27 did you have to blow it down to adjust your chemicals?  
28 MR. KRISTENSEN: We never blowed it down. We  
29 always skim it.  
30 MR. CURTIS: Right. Okay. Skimming. I'm  
31 sorry.  
32 MR. KRISTENSEN: And at that time, we had  
33 some big leak. So, I skim almost every day, every 24  
34 hours, because we have some leaking on that.  
35 MR. CURTIS: And when did that start,  
36 roughly?  
37 MR. KRISTENSEN: One week, three-four-five  
38 days after I had come on board, they start this  
39 problem.  
40 MR. CURTIS: And were you still skimming up  
41 to the day of the accident?  
42 MR. KRISTENSEN: I never skimmed in Miami. I  
43 never skim inside Miami.  
44 MR. CURTIS: Okay. At sea?  
45 MR. KRISTENSEN: At sea, we skim, yes. No  
46 skimming at that time.  
47 MR. CURTIS: Okay. And how frequently would  
48 you have to dose the boiler?  
49 MR. KRISTENSEN: When we have something like



1 this and skimming, too. Often I dose the boiler every  
2 day.

3 MR. CURTIS: Every day. If -- if you weren't  
4 having the problem with high salts, so you had to skim,  
5 how often would you have to -- have to dose the boiler  
6 typically?

7 MR. KRISTENSEN: If we don't have this  
8 problem, --

9 MR. CURTIS: Yes.

10 MR. KRISTENSEN: -- maybe every two -- two  
11 times a week, something like that.

12 MR. CURTIS: Is that true for all the boilers  
13 or some specifically 23?

14 MR. KRISTENSEN: If we have some -- some --  
15 sometimes it has a leak or leaking on the superheater  
16 or something like that, we skim off it more often. We  
17 would dose more often.

18 MR. CURTIS: Did -- did Boiler Number 23 that  
19 was involved in the accident, did that seem to require  
20 any more dosing than --

21 MR. KRISTENSEN: No, no, no. It was very  
22 good actually. No leaking at all in that boiler.

23 MR. CURTIS: Were you ever involved in the --  
24 during a BV survey of the boilers? Did you ever go  
25 through the survey process with them?

26 MR. KRISTENSEN: I don't understand what you  
27 mean about that.

28 MR. CURTIS: Class survey, Bureau of Veritas.

29 MR. KRISTENSEN: I don't think they -- the  
30 chief engineer did that. I never. I'm not involved in  
31 that.

32 MR. CURTIS: How about repair work on the  
33 boilers?

34 MR. KRISTENSEN: No.

35 MR. CURTIS: No. And you haven't had that in  
36 the past?

37 MR. KRISTENSEN: No.

38 MR. CURTIS: Have you been involved in any  
39 hydrotesting, pressure testing of the boiler?

40 MR. KRISTENSEN: No.

41 MR. CURTIS: Have you been at the tubes or  
42 plug, if they hydrotested it?

43 MR. KRISTENSEN: No, I have nothing to do  
44 with that. I don't -- never do that.

45 MR. CURTIS: So, you don't recall the highest  
46 hydrotest you've seen?

47 MR. KRISTENSEN: No, I don't do that. No  
48 pressure tests or the guys in charge of the boilers  
49 pressure test, they do that.

1 MR. CURTIS: Okay.  
2 MR. KRISTENSEN: I only have this testing of  
3 the water inside the boiler. That's my job.  
4 MR. CURTIS: Okay.  
5 MR. KRISTENSEN: But I could see it's  
6 critical if you have a leak in steam pipe, superheater  
7 or if it's leaking, I could see that on the -- on the  
8 terminal. That's the first place you see that. So, I  
9 report to them, tell them, because it's for them. But  
10 it has nothing to do with the water.  
11 MR. CURTIS: Okay. That's all I have right  
12 now. Thank you.  
13 PARTICIPANT: All right. While we're talking  
14 about it, we were -- we were in the control room and I  
15 saw your book, and did you do -- what types of tests do  
16 you do on the boiler water besides salinity?  
17 MR. KRISTENSEN: I test phosphate.  
18 PARTICIPANT: Hm-hmm.  
19 MR. KRISTENSEN: And conductivity, pH, and pH  
20 for boiler and pH for the common sort, and I test this  
21 alkalinity and the -- and the other conductivity. I  
22 don't remember the name.  
23 PARTICIPANT: Do you keep close track of --  
24 let me stop.  
25 Being the person that can identify leaks, do  
26 you also keep track of the distillate water usage?  
27 MR. KRISTENSEN: That's -- every watch keep  
28 track of that. If we use very much, we report to the  
29 next watch.  
30 PARTICIPANT: Okay.  
31 MR. KRISTENSEN: So, they -- they were  
32 reported, the chief engineer on the next watch, so they  
33 know.  
34 MR. ROTH-ROFFY: Let's go ahead and switch  
35 the tape.  
36 (End Tape 1, Begin Tape 2)  
37 MR. ROTH-ROFFY: Okay. It's a couple minutes  
38 after 4. We've turned over the tape, and we're  
39 resuming our interview.  
40 MR. OLSEN: This is Ken Olsen.  
41 Did you ever hear or did you have knowledge  
42 of or did you ever hear anyone else speaking about an  
43 old report recommending replacement of the boilers  
44 because of thermal cracks?  
45 MR. KRISTENSEN: Replacement? They want to  
46 take -- make new boilers?  
47 MR. OLSEN: Yeah.  
48 MR. KRISTENSEN: I never hear anything about  
49 that.

1 MR. OLSEN: Did you ever talk or did you hear  
2 -- ever hear or do you have knowledge of any thermal  
3 cracking problems in the boiler?  
4 MR. KRISTENSEN: No, not in the drum, never.  
5 Never hear about it.  
6 MR. OLSEN: Anywhere in the boiler?  
7 MR. KRISTENSEN: We have some leaking in the  
8 superheater pipes and stuff like that, --  
9 MR. OLSEN: Hm-hmm.  
10 MR. KRISTENSEN: -- but of -- there had just  
11 been a company from Singapore --  
12 MR. OLSEN: Hm-hmm.  
13 MR. KRISTENSEN: -- had been to retube the  
14 superheater on the economizer. But I don't hear about  
15 any cracking in the -- in the -- in the drums.  
16 MR. OLSEN: Yeah.  
17 MR. KRISTENSEN: Never hear about the drums.  
18 MR. OLSEN: Did you hear become aware of or  
19 did you ever hear any talk about some of these  
20 procedures, like did -- did you ever have a concern  
21 about cooling down that boiler so quickly?  
22 MR. KRISTENSEN: Cooling down the boiler  
23 quickly?  
24 MR. OLSEN: Yeah.  
25 MR. KRISTENSEN: Cooling down quickly?  
26 MR. OLSEN: Shutting it off quickly.  
27 MR. KRISTENSEN: No, it's no -- especially  
28 never shut it off quickly.  
29 MR. OLSEN: Did you ever hear somebody  
30 criticize the procedures that were normal -- normally  
31 done?  
32 MR. KRISTENSEN: No.  
33 MR. OLSEN: No.  
34 MR. KRISTENSEN: Never hear. Never ever  
35 hear.  
36 MR. OLSEN: You may have asked this one  
37 already before, but could you tell us where to find the  
38 official procedures for starting or stopping the  
39 boiler?  
40 MR. KRISTENSEN: Chief Engineer, I know he  
41 make some sheets we have in the boiler room to shut  
42 down the boiler, but he had made some paper to have  
43 done that.  
44 MR. OLSEN: Okay.  
45 MR. KRISTENSEN: But he make in the boiler  
46 room and in the control room, too.  
47 MR. OLSEN: All right. What language were  
48 those instructions in?  
49 MR. KRISTENSEN: English.

1 MR. OLSEN: English. Have you seen the  
2 Filipino crew members read English papers? Are they  
3 fluent --

4 MR. KRISTENSEN: They speak very good English  
5 and we speak English, too.

6 MR. OLSEN: Read -- read as well?

7 MR. KRISTENSEN: Yeah.

8 MR. OLSEN: When you secure the boiler and  
9 you shut off the fan, is it anyone's job to keep the  
10 water level in sight of the boiler gauge glass?

11 MR. KRISTENSEN: What I do, I keep an eye on  
12 the water in the gauge glass. We have a feed stop.  
13 So, I do monitor it on the boiler.

14 MR. OLSEN: Do you open the feed stop to put  
15 the water in or do you use your chemical line or some  
16 other --

17 MR. KRISTENSEN: Oh, no, no. We have -- what  
18 I do, we have this -- this feed stop, it's open a  
19 crack. We open it a little bit.

20 MR. OLSEN: You open it a crack?

21 MR. KRISTENSEN: A little crack.

22 MR. OLSEN: We happened to notice in the  
23 inboard sight glass of Number 23 boiler the sight glass  
24 is very white instead of clear. Do you have any idea  
25 why that might be --

26 MR. KRISTENSEN: Sorry. I don't know. I  
27 have no idea.

28 MR. OLSEN: When you had high salinity, did  
29 you ever have damage to your sight glasses?

30 MR. KRISTENSEN: No, no. Not because of high  
31 salinity, never.

32 MR. OLSEN: No. What -- what -- because of  
33 what then?

34 MR. KRISTENSEN: I never hear about some  
35 damage on that sight glass by Boiler 23.

36 MR. OLSEN: Okay. Have you ever seen any  
37 repairmen, either ship's crew or vendors, contractors,  
38 in any of the mud drums or any of the drums?

39 MR. KRISTENSEN: I never personally seen  
40 that.

41 MR. OLSEN: No. But are you -- do you have  
42 knowledge that they may have been aboard to do such  
43 work?

44 MR. KRISTENSEN: Inside those mud drums?

45 MR. OLSEN: Yes.

46 MR. KRISTENSEN: No. I don't know anything  
47 about works done in the mud drums. I never see  
48 somebody inside there. I don't really know, no.

49 MR. OLSEN: Tell us how, if you discover a

1 boiler has a leak, tell us how -- tell us the procedure  
2 how it gets fixed. Who do you tell? What do they do?  
3 How is it scheduled? How -- how the leak is fixed?  
4 MR. KRISTENSEN: If I see it, I report that  
5 to -- to the first engineer or -- or let us say I see  
6 this 4:00 in the night time, I will sound emergency,  
7 say like it don't use too much water, but if I see it's  
8 leaking and not so dangerous, I tell it to the next  
9 watch and the next watch would tell that to the first  
10 engineer when he shows up in the control room about  
11 8:00 in the morning. So, they report to him about this  
12 leaking or possible leaking.  
13 MR. OLSEN: Are most leaks fixed by the  
14 ship's crew?  
15 MR. KRISTENSEN: I'd say have been on the  
16 ship.  
17 MR. OLSEN: Okay.  
18 MR. KRISTENSEN: We fix a lot of boilers.  
19 MR. OLSEN: Have any of the NCL persons asked  
20 you why the boiler exploded?  
21 MR. KRISTENSEN: No, nobody asked me about  
22 that.  
23 MR. OLSEN: No.  
24 MR. LEHRER: I'm just curious. You were  
25 going to ask -- if he was to answer that he had, what  
26 would you have -- where are you going with that  
27 question?  
28 MR. OLSEN: I don't know.  
29 MR. LEHRER: Why are you asking it then?  
30 MR. OLSEN: Why am I -- because maybe I could  
31 explore that further, but I don't know if I would  
32 exactly.  
33 MR. LEHRER: Well, if you're calling for  
34 speculation as to theory, that's something we should  
35 try and leave for some other enterprise, not the one  
36 we're doing today.  
37 MR. OLSEN: Explain that again.  
38 MR. LEHRER: If you're going to ask him the  
39 question that I don't think you can ask him, why do you  
40 think the boiler blew up, asking him if someone else  
41 asked him that question leads no where.  
42 MR. OLSEN: Okay, okay. I see that. So, if  
43 I wanted to ask him something like that, I could just  
44 go ahead and ask him outright.  
45 MR. LEHRER: Well, you'd be violating, I  
46 think, our agreement at the beginning about what the  
47 party rules are.  
48 MR. OLSEN: I wasn't here the first day.  
49 MR. LEHRER: Well, as I understand it, maybe

1 Tom can tell you, --  
2 MR. ROTH-ROFFY: All right. Let's -- let's  
3 just go off the record and clear this up.  
4 (Discussion off the record.)  
5 MR. ROTH-ROFFY: Okay. It's about 9 minutes  
6 to 5, and we took a brief break to clarify an issue.  
7 Due to the hour, we'd like to probably  
8 conclude our interview this afternoon and ask that you  
9 come back tomorrow.  
10 MR. KRISTENSEN: Tomorrow. Okay.  
11 MR. ROTH-ROFFY: Okay. And so, we'll do  
12 that. We'll let you know what time and so that  
13 concludes the first part of our interview with the  
14 second engineer Trond Erickson -- correction --  
15 Kristensen.  
16 Thank you now.  
17 (Whereupon, the Interview of Second Engineer  
18 Trond Kristensen was adjourned, to reconvene tomorrow  
19 morning, Wednesday, June 4th, 2003, at 9:00 a.m.)