

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:
JOHN CRUYS MAGNUS
STAFF CHIEF ENGINEER, SS NORWAY

Wednesday, June 4, 2003

In Attendance:

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

P R O C E E D I N G S

3:15 p.m.

1
2
3 MR. ROTH-ROFFY: Okay. Good afternoon. It's
4 about 3:15 in the afternoon and the date is the 4th of
5 June 2003, and we are here to conduct an interview of
6 the Staff Chief Engineer, Mr. Magnus.

7 I'd like now to have everybody in the room to
8 please identify themselves.

9 MR. CURTIS: Brian Curtis with the NTSB,
10 Marine Engineering Accident Investigator.

11 MR. LASALLE: I'm Erik Lasalle, Senior
12 Investigating Officer, U.S. Coast Guard.

13 MR. OLSEN: Ken Olsen, Coast Guard, Office of
14 Investigations and Analysis.

15 MR. LEHRER: Richard Lehrer on behalf of
16 Staff Chief Engineer Magnus.

17 MR. OELSCHLEGEL: Chris Oelschlegel. I'm
18 with the Coast Guard Traveling Inspectors, Washington,
19 D.C.

20 MR. RILEY: John Riley, Independent Surveyor
21 for NCL.

22 MR. FOONG: Chris Foong, VP, Technical
23 Operations, NCL.

24 MR. ROTH-ROFFY: And Magnus, could you just
25 identify yourself for the transcriber?

26 MR. MAGNUS: Yeah. John Magnus, Staff Chief
27 Engineer, SS Norway.

28 MR. ROTH-ROFFY: Okay. Good. Magnus, I
29 think the reason we -- we've called you back to talk to
30 you again -- I know this is the second interview, and
31 you've been very patient with us, and I hope you'll
32 continue to be patient with us. If we ask you a
33 question that you've already answered, we apologize in
34 advance. It's not our intention to -- to give you a
35 hard time. It's -- we've talked to a lot of people and
36 some of the information we might have not had instant
37 recall of. So, please be patient with us. Okay?

38 Anyway, I think one of the reasons we've
39 called you back is to ask you about any work that might
40 have been done on that Boiler Number 23, you know,
41 since the discovery of the problem with the drum or the
42 water wall header.

43 If you can go back and search your memory, I
44 know you've been on the ship since '97, right? You
45 were in the shipyard in '99.

46 MR. MAGNUS: No.

47 MR. ROTH-ROFFY: You were not?

48 MR. MAGNUS: I was not in '99.

49 MR. ROTH-ROFFY: Okay. But you possibly have

1 seen some other repairs going on with the boiler. I
2 think what we're kind of looking for is if you have any
3 recollection of what sort of inspections and repairs
4 might have been happening down in that water wall
5 header.

6 MR. MAGNUS: What I know about the -- the
7 header, I have -- can't recollect they have done any
8 work at all on that header.

9 MR. ROTH-ROFFY: Okay. Since -- since '97,
10 since you've been on, you have no -- no recollection?

11 MR. MAGNUS: No.

12 MR. ROTH-ROFFY: Have you heard anybody
13 talking about any work that might have been done on
14 that boiler?

15 MR. MAGNUS: On the header?

16 MR. ROTH-ROFFY: Yeah. Or on the steam drums
17 or water drums or --

18 MR. MAGNUS: No.

19 MR. ROTH-ROFFY: You haven't heard anything
20 about any cracking problems on the header or the drums?

21 MR. MAGNUS: No, I don't know anything about
22 that. The only work be there is just to inspection and
23 clean up, open the manhole, look inside and clean it,
24 nothing more.

25 MR. ROTH-ROFFY: Okay. We heard from the
26 Bureau of Veritas surveyor that he last did a complete
27 boiler survey on that Boiler 23 in July of '02. Is
28 there a possibility that you were on board during that
29 complete boiler survey?

30 MR. MAGNUS: What time?

31 MR. ROTH-ROFFY: July 2002.

32 MR. MAGNUS: July 2002?

33 MR. ROTH-ROFFY: Do you recall that work?

34 MR. MAGNUS: Hmm. I can't recall it from my
35 memory. No, I don't -- can't recollect it. Can't --
36 maybe he was on board then, but I can't recall --

37 MR. ROTH-ROFFY: Okay.

38 MR. MAGNUS: -- the last inspection.

39 MR. ROTH-ROFFY: Okay. Do you recall any
40 complete boiler surveys that were done on any of the
41 other three boilers that you -- you were on board for?

42 MR. MAGNUS: The only thing I know is we have
43 retubings to Boiler 24, 21, 23.

44 MR. ROTH-ROFFY: 21 and 23 superheaters were
45 retubed? Do you recall the approximate time of those,
46 by any chance?

47 MR. MAGNUS: The last one was done last year.
48 One was this year. I was not on board when they did
49 that.

1 MR. ROTH-ROFFY: Do you recall a BV inspector
2 doing a complete boiler survey on any of the boilers?
3 Bureau of Veritas surveyor? Do you recall ever seeing
4 him do a complete boiler survey on any boiler on the
5 Norway?
6 MR. MAGNUS: Not that I can recollect.
7 MR. ROTH-ROFFY: So, since '97, you've never
8 -- never been involved in a complete boiler survey?
9 MR. MAGNUS: No.
10 MR. ROTH-ROFFY: And could you refresh our
11 memory? When did you start sailing as staff chief
12 engineer on the Norway?
13 MR. MAGNUS: It was in this year, in January.
14 MR. ROTH-ROFFY: January of 2003?
15 MR. MAGNUS: I was starting overlapping.
16 MR. ROTH-ROFFY: Okay. And before that, you
17 were sailing senior or junior first?
18 MR. MAGNUS: Senior and then junior.
19 MR. ROTH-ROFFY: Okay. Do you recall the
20 name of the BV surveyor that you've dealt with in the
21 past?
22 MR. MAGNUS: Excuse me?
23 MR. ROTH-ROFFY: Do you recall the name of
24 the Bureau of Veritas surveyor?
25 MR. MAGNUS: The guy who was coming on board
26 was also --
27 MR. ROTH-ROFFY: We'll identify him as soon
28 as we get around to it.
29 MR. MAGNUS: He usually was Idar Hofseth.
30 MR. ROTH-ROFFY: Okay. Do you recall any --
31 any prior surveyors from Bureau of Veritas?
32 MR. MAGNUS: Other people?
33 MR. ROTH-ROFFY: Yeah. Other -- before Idar.
34 MR. MAGNUS: Hmm. No, not that I recall.
35 MR. ROTH-ROFFY: Okay. Who normally deals
36 with the BV surveyor when he comes aboard to do
37 machinery inspections?
38 MR. MAGNUS: The chief engineer. We would
39 also get help with the first engineers and senior at
40 the same time.
41 MR. ROTH-ROFFY: Okay. I'm going to pass it
42 to Brian.
43 MR. MAGNUS: Can I say one thing? Was one
44 time, I think it was Idar Hofseth, we had to open the
45 Main Boiler 22 and that time, he was looking into the
46 drum of the boiler.
47 MR. ROTH-ROFFY: Okay.
48 MR. MAGNUS: I don't recollect what time that
49 was.

1 MR. CURTIS: Good afternoon, Mr. Magnus. My
2 name is Brian Curtis.
3 Who is your -- your relief? Who -- who
4 relieves you on the vessel?
5 MR. MAGNUS: It's Tor Patrik Haavs, the staff
6 chief upstairs.
7 MR. ROTH-ROFFY: Could you spell that,
8 please, if you can?
9 MR. MAGNUS: Tor, T-O-R, Patrik,
10 P-A-T-R-I- -- I don't know if it's C or K, H-A-A-V-S.
11 MR. ROTH-ROFFY: Haavs?
12 MR. MAGNUS: Haavs.
13 MR. CURTIS: Haavs. And do you know how long
14 Mr. Haavs has been staff chief, approximately?
15 MR. MAGNUS: Approximately? It's been for
16 three -- two and a half-three years.
17 MR. CURTIS: I realize you've never been
18 involved with the Class BV survey, but any time after
19 plugging tubes in the boiler, when you bring --
20 pressurize the boiler to check -- check for leaks,
21 what's -- what's the highest you ever seen that -- that
22 boiler hydropressure tested to?
23 MR. MAGNUS: What I have seen is up to
24 approximately like about 60 kilo.
25 (Pause)
26 MR. CURTIS: Okay. We just reset the tape.
27 We had a little problem with it.
28 The question, Magnus, was what's the highest
29 hydropressure test you've ever seen Boiler 23 or any of
30 the boilers, for that matter, taken to when you've
31 done, as you say, plugged a tube?
32 MR. MAGNUS: It was up to 60 kilo,
33 approximately.
34 MR. CURTIS: So, you've never seen the safety
35 valves in the boiler -- have the hardware put on them
36 to keep them from opening and tried pressure testing
37 above the pressure of the safety valve?
38 MR. MAGNUS: No.
39 MR. CURTIS: So, you've never seen that
40 boiler tested to, say, 75 bar?
41 MR. MAGNUS: No.
42 MR. CURTIS: And regarding the fuel oil
43 pressure regulators, do you recall any work being done
44 on those in the past two years? Any work being done on
45 them?
46 MR. MAGNUS: The fuel oil regulators?
47 MR. CURTIS: The pressure regulators?
48 MR. MAGNUS: Which one?
49 MR. CURTIS: For Boiler 23. The pump feeding

1 Boiler 23.

2 MR. MAGNUS: This is for the -- for the
3 special for that boiler, you mean? Is it like a
4 controller for the fuel flow you're talking about now?

5 MR. CURTIS: Yes. Anything that regulates
6 the flow of pressure to the boiler.

7 MR. MAGNUS: We have three pieces of that.
8 There are one for recent plating, what is controlling
9 the main pressure to the boiler, and we have one for
10 the flow to the burners in the boiler.

11 MR. CURTIS: Yes, okay. Any -- any
12 maintenance there that you recall?

13 MR. MAGNUS: I --

14 MR. CURTIS: Repairs.

15 MR. MAGNUS: Not repairs. They have changed
16 out positioners some time but that is a long time ago.
17 I -- I can't recollect the day or date or anything
18 like that.

19 MR. CURTIS: And the positioner does what?

20 MR. MAGNUS: That one is giving -- taking the
21 steam and keeping the pressure stable.

22 MR. CURTIS: I'm sorry. I didn't get that.
23 Could you repeat that?

24 MR. MAGNUS: That is what is controlling the
25 fuel pressure to the boiler stable.

26 MR. CURTIS: That's all I have right now.
27 Ken?

28 MR. OLSEN: What -- what years -- I'm sorry
29 if I didn't catch it. I realize that you indicated
30 that you've just been the staff chief recently, but I'm
31 going to say a date and maybe you can tell me what --
32 how -- what your employment was, whether you were a
33 second or a third, and I want to give you a month and
34 then just tell me -- tell me if you were employed there
35 and as what grade.

36 In -- in May of 1999, were you on board the
37 vessel?

38 MR. MAGNUS: May '99?

39 MR. OLSEN: '99, yeah.

40 MR. MAGNUS: Not quite sure because I was in
41 school during '89 -- no -- in '98-99. So, I don't
42 think -- I don't think I was on board in May.

43 MR. OLSEN: In May. How about in December of
44 '99, near Christmas?

45 MR. MAGNUS: December '99? That can be a
46 possibility I have been on board during that time.

47 MR. OLSEN: If you were on board, what would
48 you have been?

49 MR. MAGNUS: In '99, December '99, first

1 engineer junior.
2 MR. OLSEN: First engineer junior. Okay.
3 How about in January 2000? January 22nd, 2000?
4 MR. MAGNUS: January 2000? I could be -- if
5 I was on -- you said first December '99?
6 MR. OLSEN: Yeah. It would be a month later.
7 MR. MAGNUS: 2000. Yes, I was on board then.
8 MR. OLSEN: Okay. And also as first?
9 MR. MAGNUS: I don't know --
10 MR. OLSEN: Excuse me?
11 MR. MAGNUS: -- because during that time,
12 right after Christmas 2000 -- no. In '99, New Year
13 2000, that is changing vacation. I'm off.
14 MR. OLSEN: So, --
15 MR. MAGNUS: So, in January. So, that's the
16 beginning of January and probably the first week, first
17 two weeks in there.
18 MR. OLSEN: You were on board maybe the first
19 week. Okay. Now we'll jump up to -- to June of '01.
20 MR. MAGNUS: June?
21 MR. OLSEN: Yeah. 2001.
22 MR. MAGNUS: No, I can't recollect 2001.
23 MR. OLSEN: Okay. How about November of '01?
24 MR. MAGNUS: November? What time in
25 November?
26 MR. OLSEN: Late November, 11/23.
27 MR. MAGNUS: No, I -- I can't recollect.
28 MR. OLSEN: Not sure?
29 MR. MAGNUS: No.
30 MR. OLSEN: Okay. How about May of '02?
31 Sorry. We got two -- just two more dates. I'm sorry.
32 I know I would have a hard time answering this.
33 MR. MAGNUS: If you told me you want to have
34 that information, I should bring you some papers.
35 MR. OLSEN: Yeah.
36 MR. MAGNUS: This is difficult to say.
37 MR. OLSEN: Okay.
38 MR. MAGNUS: But those dates and things like
39 that, I should be able to find them for you.
40 MR. OLSEN: Okay. It's -- we're just asking
41 generally. If you happen to recall it, it's fine. If
42 you don't.
43 So, maybe -- maybe not, and then how about --
44 and then, in July of '02?
45 MR. MAGNUS: July '02?
46 MR. OLSEN: Yeah.
47 MR. MAGNUS: No, I don't think I was on.
48 MR. OLSEN: Okay.
49 MR. MAGNUS: I don't think I was on during

1 that time.
2 MR. OLSEN: You don't think you were on.
3 Okay. If -- if a lube oil pump failed in the engine
4 room, you -- you probably would know about it, right?
5 MR. MAGNUS: Yes.
6 MR. OLSEN: Same thing with a hole in a steam
7 line, you probably --
8 MR. MAGNUS: Excuse me?
9 MR. OLSEN: If you had a problem in a steam
10 line, --
11 MR. MAGNUS: Steam line?
12 MR. OLSEN: -- you'd know about it? If you
13 had a superheater steam leak, a flange leak, you'd know
14 about it as well, right? You -- you hear the important
15 problems, is that correct?
16 MR. MAGNUS: Yes, usually, we do.
17 MR. OLSEN: Yeah. So, we could be pretty
18 much assured if anyone had -- did any work while you
19 were on board in that boiler, somebody would know about
20 it, a chief would know about it?
21 MR. MAGNUS: If we had a steam leak on the
22 boiler, yes, of course.
23 MR. OLSEN: Yeah. Whether it's --
24 MR. MAGNUS: Or it has to be outside of the
25 boiler, not inside.
26 MR. OLSEN: Yeah, yeah. You can't -- you
27 wouldn't know of something you couldn't see, and you
28 pretty much -- well, during the times that you're on
29 board, you would know of the important repairs going
30 on?
31 MR. MAGNUS: Yes.
32 MR. OLSEN: Okay. All right. I don't have
33 any more questions.
34 MR. LASALLE: All right. Lt. Lasalle, U.S.
35 Coast Guard.
36 Just to continue where Ken left off, if --
37 and for my clarity, if there was any work done on the
38 headers or anything of that nature, you would know
39 about it, correct?
40 MR. MAGNUS: I would know about it. Well,
41 yes, I would know it after the work had been done
42 because I also -- if they not telling me that one, we
43 got a report every week.
44 MR. LASALLE: But you would eventually find
45 out?
46 MR. MAGNUS: Yeah.
47 MR. LASALLE: And if any surveyor did a
48 complete survey of the boiler, would that also be
49 brought to your attention?

1 MR. MAGNUS: Yes.
2 MR. LASALLE: Okay. So, when you said that
3 you -- you weren't aware of any complete surveys --
4 MR. MAGNUS: Not recently, but what I explain
5 to him, and I said Boiler 22 --
6 MR. LASALLE: Boiler 22?
7 MR. MAGNUS: -- what they -- that was -- I
8 can't recall because they were also doing some
9 cleaning, cleaning of that boiler at that time.
10 MR. LASALLE: Do you -- if a survey -- did
11 any crew assist in the boiler survey or do they
12 normally assist in a boiler survey or any survey?
13 MR. MAGNUS: Crew helping?
14 MR. LASALLE: Assisting? Shadowing, maybe?
15 MR. MAGNUS: Shadowing?
16 MR. LASALLE: Following -- following him
17 around or her around?
18 MR. MAGNUS: No. Because he -- he know what
19 he's doing, whatever he is doing. So, he's there by
20 himself to look around the boiler.
21 MR. LASALLE: Okay. Thank you.
22 MR. ROTH-ROFFY: Okay. We have a new person
23 that's joined the interview. Mr. Lambert from Bureau
24 of Veritas.
25 Sir, would you like to ask any questions?
26 MR. LAMBERT: No, no questions.
27 MR. RILEY: No questions.
28 MR. OELSCHLEGEL: Yes. Chris Oelschlegel
29 with the Coast Guard.
30 Magnus, were you aware of any tubes plugged,
31 that had been plugged in the Main Boiler Number 23
32 water wall drum?
33 MR. MAGNUS: Yes, there are two or three
34 tubes from the header and the cause of that, it's --
35 they have bad circulations, so they are plugging them
36 and so we don't get into trouble.
37 MR. OELSCHLEGEL: Okay. Can you tell me how
38 your procedure for plugging tubes?
39 MR. MAGNUS: On the header -- header?
40 MR. OELSCHLEGEL: On that particular header.
41 MR. MAGNUS: I -- I don't know.
42 MR. OELSCHLEGEL: Okay, okay. Do you have --
43 do you have the same set procedure for plugging tubes,
44 any tubes? Do you have a different procedure for -- my
45 question is, would you plug the superheater tube in the
46 same fashion that you would plug a water wall drum tube
47 or a main steam drum-generating tube?
48 MR. MAGNUS: Probably, it will. I haven't
49 read it, so -- or anything like that. So, I can't tell

1 you for certain, but probably it is the same thing.
2 MR. OELSCHLEGEL: I see. That's all I have.
3 Thank you.
4 MR. ROTH-ROFFY: Chris?
5 MR. FOONG: I just want to clarify. Chris
6 Foong, NCL.
7 When you earlier mentioned that eventually
8 you would be notified about repairs, I just want to
9 clarify. Being the first engineer, you should have
10 knowledge about repairs. When you say eventually you
11 find out, do you mean when you would go on vacation and
12 come back?
13 MR. MAGNUS: Do you mean what had been done
14 with the boilers when I was on vacation?
15 MR. FOONG: Yes.
16 MR. MAGNUS: Yes, when I'm reading through
17 the papers and the report is also there, I'm notified
18 of the things that happened.
19 MR. FOONG: Okay.
20 MR. ROTH-ROFFY: As part of the annual
21 machinery survey on the boilers, do you lift the relief
22 valves or are the relief valves lifted on the boilers?
23 MR. MAGNUS: Excuse me?
24 MR. ROTH-ROFFY: As part of the BV annual
25 machinery survey on the boilers, do they -- do they
26 make the relief valves lift?
27 MR. MAGNUS: Do you mean for steam?
28 MR. ROTH-ROFFY: Yes.
29 MR. MAGNUS: Testing?
30 MR. ROTH-ROFFY: Testing, correct.
31 MR. MAGNUS: That is done by them when the
32 ship is in drydocks. They are taking off the valves to
33 go inside and test it there and it should also be
34 tested in place in the drydocks, but that is what I
35 have been told, if they have done it. I have never
36 been on board when that has happened.
37 MR. ROTH-ROFFY: Okay. So, you've never seen
38 the safety valves on the boilers tested in place with
39 steam?
40 MR. MAGNUS: No.
41 MR. ROTH-ROFFY: When you -- after you repair
42 a tube, plug a tube, when you go to -- to test the
43 repair, test for leaks, what pressure do you normally
44 bring it up to? What pressure? Yeah. After a repair
45 of a tube --
46 MR. MAGNUS: Yeah.
47 MR. ROTH-ROFFY: -- leak with a plug, do you
48 hydrotest after that?
49 MR. MAGNUS: We hydrotest after that, yes.

1 MR. ROTH-ROFFY: Do you know to what pressure
2 you would hydrotest?
3 MR. MAGNUS: 60 kilo.
4 MR. ROTH-ROFFY: 60 kilo. Okay. Brian
5 Curtis?
6 MR. CURTIS: I'm good for right now.
7 MR. OLSEN: You mentioned that you -- you
8 were aware of -- of plugs in the water wall header.
9 How did you become aware of that? Did you ever look in
10 and see them?
11 MR. MAGNUS: I have -- I saw it on Main
12 Boiler 23 now, took a really good look inside of it,
13 and -- and I have been told it, also, because when I've
14 been inside of one of the boilers to look, you can see
15 there's some pipes missing, and I have been told why
16 they have been plugged and -- and -- and the cause of
17 it.
18 MR. OLSEN: Okay. But you've never -- you've
19 never inspected a plugging job on that boiler when it
20 was done?
21 MR. MAGNUS: No.
22 MR. OLSEN: Okay. Does your ship have a
23 hydro pump, a special hydro pump to pressurize boilers?
24 High-pressure/low-volume?
25 MR. MAGNUS: We are using the -- we are using
26 the water pump to --
27 MR. OLSEN: Yeah. But is there another pump
28 available?
29 MR. MAGNUS: We have a high-pressure pump for
30 washing the flooring and things like that.
31 MR. OLSEN: Yeah. But not a special hydro
32 pump?
33 MR. MAGNUS: No, no special hydro pump.
34 MR. OLSEN: Okay. What about back flow fans?
35 MR. MAGNUS: Excuse me?
36 MR. OLSEN: Back flow fans. Do you --
37 MR. MAGNUS: Back flow fans?
38 MR. OLSEN: Yeah. Like to prevent back flow
39 when you secure a boiler. Is that's something that
40 used to be on the ship or --
41 MR. MAGNUS: Back flow fans?
42 MR. OLSEN: Yeah. Fans.
43 MR. MAGNUS: Fans, back flow fans? Actually,
44 I don't know what you're talking about.
45 MR. OLSEN: Okay. All right. Well, I just
46 -- I saw it in a book and it looked like something to
47 prevent back flow of gases to the boiler.
48 MR. MAGNUS: Do you mean a back flow fan?
49 MR. OLSEN: Yeah. Let me ask you this.

1 MR. MAGNUS: Yeah.
2 MR. OLSEN: Could the reason that the four
3 strap fan is left on when you secure the boiler to
4 prevent gases from coming back into the boiler from the
5 other boilers that are operating?
6 MR. MAGNUS: No, no, no, no. This is -- the
7 boilers are separate for the fan. There is no
8 connection between them.
9 MR. OLSEN: Okay.
10 MR. MAGNUS: They need a special entrance,
11 and I have been working in one ship and that was in the
12 Navy, not on these ships.
13 MR. OLSEN: Were you -- you were on board in
14 -- in May 2002? May of last year?
15 MR. MAGNUS: May 2002?
16 MR. OLSEN: Yeah. I guess when they had the
17 sprinkler problem.
18 MR. MAGNUS: Sprinkler problem?
19 MR. OLSEN: Fire main problem. Excuse me.
20 Were you on -- about a year ago, were you on board?
21 MR. MAGNUS: Can you recollect my memory what
22 happened?
23 MR. OLSEN: Well, I just have a note here,
24 May, and I'm -- I'm referring to a note that was in an
25 audit report, and it -- and it talked about that an
26 extra -- extra crew was needed to perform --
27 MR. MAGNUS: Ah.
28 MR. OLSEN: -- maintenance work and
29 engineering work.
30 MR. MAGNUS: That was for the sprinkler
31 system on board, is that right?
32 MR. OLSEN: Yeah. But I don't know if it was
33 for the sprinkler -- I just saw a note that said that
34 they were having a hard time doing maintenance and that
35 the engine room was kind of dirty. They needed a lot
36 of cleaning in the engine room. Do you recall anything
37 about that?
38 MR. MAGNUS: No.
39 MR. OLSEN: Okay.
40 MR. MAGNUS: May 2002?
41 MR. OLSEN: Yeah. About a year ago.
42 MR. MAGNUS: Hmm. No, I don't think I was on
43 board during that time.
44 MR. OLSEN: Okay.
45 MR. MAGNUS: I'm not quite sure.
46 MR. OLSEN: Did you ever feel that you had to
47 talk to the chief engineer about the shutdown procedure
48 of the boilers? Shutting them down and lighting them
49 off often and cooling them down rather quickly?

1 MR. MAGNUS: No. Quickly? No.
2 MR. OLSEN: No. You never felt that that was
3 an issue that you should be concerned about?
4 MR. MAGNUS: About the boilers, no.
5 MR. OLSEN: Okay. And I might have asked you
6 this but I can't remember. You've never heard of a
7 report way back in the '80s, and I realize that you're
8 not on board, but you know how things carry on on
9 ships, a report recommending the removal of -- of
10 boilers because of thermal cracking?
11 MR. MAGNUS: No, I don't.
12 MR. OLSEN: Okay. All right. Thank you.
13 MR. RILEY: No questions.
14 MR. ROTH-ROFFY: Okay. I just have a couple
15 questions.
16 Regarding the cool-down procedures for the
17 boiler, --
18 MR. MAGNUS: Hm-hmm.
19 MR. ROTH-ROFFY: -- sometimes you run on --
20 on three boilers and sometimes you run on two. When
21 you go from three boilers to two boilers, you shut one
22 boiler off, and we've -- we've kind of heard from some
23 of the other crew members how you do that. Could you
24 describe from your understanding of the way it's done?
25 MR. MAGNUS: The way it's done?
26 MR. ROTH-ROFFY: Yeah. What -- you know,
27 suppose you no longer need the third boiler, you want
28 to shut it off. What -- how would that be done to
29 secure that?
30 MR. MAGNUS: Well, we take it off line.
31 MR. ROTH-ROFFY: Correct.
32 MR. MAGNUS: It's actually shutting that one
33 down and then you also go to the other boilers so you
34 are taking them up after you are taking the load down
35 on that boiler, and then you would take one burner off
36 and wait and see those two boilers is working good and
37 you would take one more burner and then also keeping
38 the air flow down so it doesn't waste too much fuel,
39 taking it down and you're taking those other two
40 boilers, and when you're taking out the third burner,
41 you also will take and reducing the air down to one
42 fan, forced fan, and you keep an eye on your other
43 boilers that everything's okay there, and so on and so
44 on, and then you are shutting down one more, there's
45 one burner left. You start to closing the main steam
46 valve system off the boiler and then you are preparing
47 the starting line and you are also starting to close
48 down the diesel with the line and then you're putting
49 out the last burner. You are doing that, and then you

1 left the one fan running about 25-30 percent on it and
2 you would leave it like that and then you also keep an
3 eye on the water pressure so you have water on the
4 boiler and it's good enough, and you also let the steam
5 go off a little bit and you open the drains to the
6 boiler. Then you leave it like that till it's cooled
7 down.

8 MR. ROTH-ROFFY: Okay. Do you leave the
9 drains -- all the drains are opened up?

10 MR. MAGNUS: Not -- not all -- all of them.
11 You would leave a crack open so it's still producing
12 steam to the boiler because it's still hot.

13 MR. ROTH-ROFFY: Right.

14 MR. MAGNUS: So, you have to cool off the
15 superheater and that you are doing when the drains are
16 open.

17 MR. ROTH-ROFFY: And about how long does it
18 go -- take to go from -- from --

19 MR. MAGNUS: Six -- six -- six hours.

20 MR. ROTH-ROFFY: Six hours?

21 MR. MAGNUS: Yeah. Then you have it down
22 approximately six-seven hours.

23 MR. ROTH-ROFFY: Okay. And is there a reason
24 why you keep the four strap fan running while it's
25 cooling down?

26 MR. MAGNUS: That is to have -- have the air
27 supply in and that helps also to cool down the boiler.

28 MR. ROTH-ROFFY: Is there a reason you want
29 to cool it down quickly?

30 MR. MAGNUS: No, that is not a quickly way.
31 That is just to -- the normal procedure we are doing.

32 MR. ROTH-ROFFY: Okay. And then, how long
33 normally would that boiler be shut off? For two days
34 or three days, and then you would light it off again?

35 MR. MAGNUS: It depends actually if you have
36 a routine to work on it, then it would stay out and
37 maybe we take it up to the next boiler one or two days
38 off, when we need it.

39 MR. ROTH-ROFFY: Okay. Did you ever consider
40 closing all the vents and drains and shutting off the
41 four strap fan and just holding the steam pressure?

42 MR. MAGNUS: No.

43 MR. ROTH-ROFFY: Why not? Why wouldn't you
44 do that?

45 MR. MAGNUS: Because it would get too hot.
46 You would probably melt down the superheaters because
47 it's too hot then.

48 MR. ROTH-ROFFY: No. I mean, after, say, let
49 the superheater vent run for 30 minutes or an hour and

1 then shut it off.
2 MR. MAGNUS: No, no, no.
3 MR. ROTH-ROFFY: It still gets too hot?
4 MR. MAGNUS: Yeah.
5 MR. ROTH-ROFFY: What about after two hours
6 and you close it off? No?
7 MR. MAGNUS: No.
8 MR. ROTH-ROFFY: Okay. How about just
9 shutting off the four strap fan?
10 MR. MAGNUS: There is no air for the boilers.
11 So, you are running the fan for the boiler.
12 MR. ROTH-ROFFY: Okay.
13 MR. MAGNUS: Till it's cooled down.
14 MR. ROTH-ROFFY: And who established those
15 procedures? Do you know? Is it -- how long you've
16 been -- they have been running the ship that way?
17 MR. MAGNUS: I know they have been running
18 it.
19 MR. ROTH-ROFFY: As long as you've been on
20 board?
21 MR. MAGNUS: Yeah. Can we take a small break
22 so we can take a smoke and so forth?
23 MR. ROTH-ROFFY: You know, actually, I think
24 we might be done with you.
25 MR. MAGNUS: Okay.
26 MR. ROTH-ROFFY: Just one more question.
27 MR. MAGNUS: Good.
28 MR. ROTH-ROFFY: Ken Olsen.
29 MR. OLSEN: We've heard from a number of
30 engineers and they expressed concern over stresses put
31 to the boiler, expansion and contraction, from cooling
32 it down very quickly. Did you ever hear any discussion
33 about those -- those types of issues?
34 MR. MAGNUS: No.
35 MR. OLSEN: Okay.
36 MR. ROTH-ROFFY: Anybody else?
37 (No response)
38 MR. ROTH-ROFFY: You've got your break. You
39 have the rest of the afternoon.
40 Okay. The time is about 5 minutes to 4 and
41 that will conclude our interview of Staff Chief
42 Engineer Magnus.
43 Thanks, sir.
44 (Whereupon, at 3:55 p.m., the Investigative
45 Interview of John Cruys Magnus, Staff Chief Engineer,
46 SS Norway, was concluded.)
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