UNITED STATES OF AMERICA
NATIONAL TRANSPORTATION SAFETY BOARD

In the Matter of:	)	
SS NORWAY	)	DCA 03 MM 032

Miami, Florida
Wednesday,
June 11, 2003

The above-entitled matter came on for the Interview of Francois Teissier, pursuant to Notice, at 2:58 p.m.

APPEARANCES:

For the National Transportation Safety Board:

TOM ROTH-ROFFY
BRIAN CURTIS

For the United States Coast Guard:

CARLOS PAILLACAR
KEN OLSEN
CHRIS OELSCHLEGEL

For the Bureau of Veritas:

MICHEL LAMBERT

For Norwegian Cruise Lines:

JOHN RILEY

For Bahamas Authority:

KEVIN HISLOP

Also Present:

RICHARD LEHRER
NICK SWERDLOFF

I N D E X

P R O C E E D I N G S

2:58 p.m.

Whereupon,

FRANCOIS TEISSIER

having been first duly sworn, was called as a witness herein and was examined and testified as follows:

MR. ROTH-ROFFY: Good afternoon. The time is almost about 3:00 in the afternoon and the date is the 11th of June 2003. We are here to interview Mr. Francois Teissier of Bureau Veritas. Good afternoon, sir.

THE WITNESS: Good afternoon everybody.

MR. ROTH-ROFFY: Sir, you've been through this already I know with some of the other surveyors, but I'll just do it for the record.

My name is Tom Roth-Roffy and I'm an investigator with the National Transportation Safety Board. We are conducting an investigation of the accident that occurred aboard the SS Norway on May 25, 2003.

Our investigation is strictly a safety investigation, not a legal investigation. Our aim is to determine the cause of the accident and to make recommendations aimed at preventing similar future accidents.

The reason we've asked you to come here is we believe that you may have some information that may assist us in our investigation. What I'd like now is for each person in the room to please identify themselves.

MR. CURTIS: Brian Curtis, National Transportation Safety Board, engineering accident investigator.

MR. LAMBERT: Michel Lambert from Bureau Veritas.

MR. OLSEN: Ken Olsen, Coast Guard Headquarters.

THE WITNESS: I'm Francois Teissier, Bureau Veritas Miami.

MR. PAILLACAR: Carlos Paillacar, U.S. Coast Guard Miami Investigation.

MR. OELSCHLEGEL: Chris Oelschlegel, Coast Guard Headquarters.

MR. SWERDLOFF: Nick Swerdloff, counsel for Bureau Veritas and Mr. Teissier.

MR. LEHRER: Richard Lehrer with NCL.

MR. HISLOP: Kevin Hislop representing the Bahamas Maritime Authority.

MR. RILEY: John Riley, independent surveyor for NCL.

MR. ROTH-ROFFY: Thank you. That's everybody in the room.

EXAMINATION

BY MR. ROTH-ROFFY:

Q Sir, I'd like to maybe just start with a little background information on you, your background, how long you've been with BV and what your current position is.

A Okay. I have a general technical education, what we call in France an engineer. I specialize in hydrodynamics and sea keeping calculations.

I joined Bureau Veritas in 1981 and ever -- always worked with BV, first in the R&D Department, then in the commercial team, then in the quality department for compliance in 1982/19983.

I also worked with the house structural department for a little while, it was more training than real operation. That has been just how to use the rules for (inaudible). And also -- so I've been in charge for the last three years of the Bureau Veritas North America Marine Division.

My job is I would say to run the general office and operation. I'm not technically involved in the surveys, this is left to the chief surveyors. I'm here to make sure we have the resources to do our job and to try to development business activity and to manage relations with the clients and the authorities.

Q You said your specialty was hydrodynamics and?

A Sea keeping.

Q Sea keeping, I'm sorry.

A Simulation of moorings we have at sea and so on.

Q You said you're not technically involved in the survey of the boilers, that it's the responsibility of the surveyors?

A I'm not involved in the survey at all, whether it's machinery or the system. For each region, the chief surveyors, which we call SSOM, Ship in Service Operation Manager, and he is supervising a network of surveyors and every request for surveys goes directly to him, not to me.

He then assesses the surveyor who should be assigned for this job, briefs him as necessary and then validates -- check his reports and validates the survey. But I'm not involved in this operation.

Of course, I have meeting with him to know

what are his problems, what difficulties there might be in terms of the job. But it's more I would say on a global point of view than on one specific issue.

Q You called that title SSOP?

A SSOM. This is what you will find in the definitions of the Bureau Veritas organization, Ship in Service Operation Manager. We have about 130, 150 -- over 100 SSOM in the world and each of them manage an area.

Q In the United States, is that Mr. McBride?

A That is Mr. McBride, yes. And he manage USA and Canada.

Q Who provides technical oversight for Mr. McBride, the SSOM?

A The head office. Mr. McBride is, I would say -- there is a monitoring of his job in head office and also by the -- what we call the Marine Center, the administrative entity in some location of BV. There are 10 in the world. They do render monitoring of the reports, I think goal is maybe 2 percent of the reports, and also on a regular basis, I think it's every three years, one person from head office, there are four departments, each department is in charge of a region and of course, monitoring all sorts of activity in this region.

So one person for the America region would come here and audit Mr. McBride's work. This has been done I think quite recently, the beginning of this year or the end of 2002. It is done every three years.

Additionally, every year all the SSOM meet in France for a two or three days meeting and training and information about the new rules and new regulations.

Q Did you say that was every year?

A Every year, yes. In September. Traditionally it does meet in September.

Q Who is responsible for inspecting or surveying -- correction. Who in your opinion is responsible for insuring the safety of boilers on board the Norway? Is it the owner, is the Bureau Veritas?

A I think in my opinion it is the owners. Classification. I don't know if I should elaborate on the role of classification.

Q Please do, sir.

A Classification is an assessment of the ship that you need to (inaudible) at a certain date, the date of the survey. The surveys are done as per the rules and as per the general condition of Bureau Veritas.

The rules are not a guide for maintenance,

they are not a guide for constriction, is it a standard which is accepted by the industry and the role of the surveyor is to take a picture of the ship, compare it to the standard and say it is okay or you have to do these repairs before we will issue a certificate.

Q But the rules are designed to provide for safe operation of marine equipment; is that correct?

A No. No, it's not the purpose of the rules. We put in the rules of course as much as possible the technical knowledge of the industry and we design the rules with the contribution of knowledgeable people of the industry, but the purpose of the rules of course is to set the standard, which we hope is recognized as a good standard, otherwise we won't have any clients, we won't have any flag recognition.

But the safe operation of the ship is the ultimate responsibility of the operator.

Q The BV rules are intended -- are they technical rules or performance standard so that you obtain efficient operation of equipment or are they rules to insure that the equipment is safe? Could you elaborate on what your understanding of the purpose of the rules is?

A The rules do not guaranty any performance. It specifically says that. Maybe I should give you a copy of this page which summarizes the principle of the rules.

Q Okay.

A Certainly we do not guaranty any performance. Maybe I should quote you, because I want to be very precise.

Q Please.

A Let me find the correct part of the document. (Reviewing document.)

Q Sir, could you just describe what you're reading from?

A I'm reading the first page of the rules, which is called "Marine General Conditions." This document is sent to all the clients every year.

MR. SWERDLOFF: It was probably on the disk we provided to you.

THE WITNESS: Yes, it is. "The rules, procedures and instructions of the Society take into account at the date of the preparation the state of the currently available and proven technical knowledge of the industry. They are not a code of constriction, neither a guide for maintenance or (inaudible)."

Then "The Society in providing its services --" which means the surveys -- "makes use of random

inspections and are absolutely exclusive of any monitoring and thorough verifications." Which means we do random inspection to assess that the ship is in compliance with the rules. We do not inspect every inch of the ship every year, or every five years. It's not particular.

I don't know if I answered your questions concerning the maintenance. You were saying the safety. I'm trying to find what is the best. (Reviewing document.) "Classification is the appraisement given by the Society for its clients as to a certain date following surveys by its surveyors along the lines specified in the following article.

"On the level of compliance are unique to each rule and all part of them. This appraisement is represented by the class entered on the certificate and priority transcribed in the Society's register."

Basically, we say nothing more, that's it. Your ship is in compliance with this chapter of the rules, if it is a oil tanker, is this chapter of the rules, if it is a gas carrier and so on. We do not pretend to be the ultimate reference. We believe we work because the standard is recognized, but we do not pretend to be the only ultimate reference.

And regarding maintenance, general maintenance, you asked me the question at the beginning, "It is incumbent upon the client to maintain the condition of the unit after surveys, to present the need for surveys and to inform the Society without delay of circumstances which may affect the given (inaudible) to modify this code."

Which means any -- when we go on board to do a survey, the first thing the client should tell to Bureau Veritas is to describe what are the current problems on the ship or what have been the problems that have linked with the compliance of the ship with the standards.

And if between two surveys, for example, I'll take an example, the ship has grounded, it affects the class because it can deform the structure and so on. The owner have to report this grounding, even if it is two years before the next dry dock.

If they don't and if the next dry dock we observe there are some damages, they have to be repaired. Where does it come from? Oh, we had a grounding. And if then for insurance purpose, the insurance ask us the classification at the time of the grounding, we will refuse it because the rules have not been met.

It is really a continuous exchange of information, but the one who is on board (inaudible) with information coming from the ship and at the time of the survey, we do our inspection. If we have information that there is a problem here, there is a problem there, of course we will focus on these points. If we have no reason, they say that everything is okay, we do the inspection as per the rules.

BY MR. ROTH-ROFFY:

Q In insuring that the vessel is operated or maintained in a condition that meets the requirements of the rules, is it incumbent upon BV to provide a complete survey to insure that the rules are being met, the class rules? How does BV --

A For every type of survey there are guidelines. You got the example of boilers. There are guidelines for hull annual surveys, hull class renewal surveys. There are guidelines for machinery diesel engine inspection. This is I would say a basic check list, because on the report it is printed out in check list form for the surveyor when he goes on board.

He is not requested to go further if he has no reason to doubt or if he has not been informed that yes, on this engine we have a temperature problem or we have burns or we have been through bearings. In that case, of course he will go beyond the basic survey.

But there is not -- you said "complete," complete is a bad word. As I do for certain providers, we explain it was an adjective to -- like special surveys, which there has nothing special. It was just a name for the annual survey, which is now named class renewal survey.

Q I believe it's a TNS document that you provided for boiler surveys. You say they are guidelines. These guidelines are for the surveyor's use in conducting a survey, correct?

A Yes.

Q Are these guidelines rules or requirements that the surveyor must follow in conducting the survey or is it a recommendation?

A I think we have tried, because in this TNS I think we have to put both what is the minimum the surveyor has to do and a little bit of our experience to guide the surveyor in the surveys.

I know when we were working on the quality system of the -- in '93, we tried to formalize that saying which reports, one page what are the instructions to the surveyor to do this, this, this and this and then advices and guidelines when you do this,

you should take into consideration this and this and that.

But it is very difficult to do, so in fact it is a mix of both and this is why the report are prepared in the form of check list, which really lists all the key points of the survey and if a surveyor wants to refer to the guidelines to get more information, he refers to this TNS. There is a draft of the check list of the survey report. It's essentially the minimum instruction and the TNS includes the instruction and the guidelines together.

Q So there are some parts of the TNS that are merely guidance and not actually a requirement for the survey?

A Yes. If you read through all the TNS, some paragraphs are more advice than instruction, yes. Just to maintain the experience that we documented.

Our instructions, specifically the flag requirements in the TNS, we say okay, the Bahamas flag will need this, this and this and you cannot escape from that.

Q Okay. That brings a new interest, your relationship with the flag, in this case Bahamas. Do the BV rules serve as the flag state regulations?

A No. When we represent the flag, we represent the flag for the content of the delegation, which may mean through the IMO conventions, and in addition, Bahamas can issue specific requirements for the safety surveys or the (inaudible) surveys, which will be used by the surveyor when he does his survey on the Bahamas flagship.

But classification is really also weighed against BV rules, which shall we say are a private standard and (inaudible) because if there are the surveys on behalf of the flag to check compliance with the international conventions.

Q So BV checks compliance of the flag of the vessel with international conventions. Does Bahamas also have its own regulations for safety of boilers and other machinery?

A I don't know. If they have, they would be in our TNS dedicated to Bahamas flag, but I don't know by heart.

MR. ROTH-ROFFY: I'm going to go ahead and pass to Brian.

MR. CURTIS: Brian Curtis.

EXAMINATION

BY MR. CURTIS:

Q Just have some questions regarding surveys

but I'm not sure whereas you don't technically do the technical surveys, if you have the answers.

If you're checking a header, if you can't physically enter that header because of say you're too large, are there other requirements that you need to carry out, such as a hydro of that boiler to verify the integrity of the vessel?

A I cannot be 100 percent sure, because as I said, I don't practice these rules, but I doubt there is anything written like that in the rules or in the guidelines.

MR. CURTIS: I'm going to pass right now. Thank you.

MR. OLSEN: I've got a few questions. Ken Olsen, Coast Guard.

EXAMINATION

BY MR. OLSEN:

Q I am referring to a Babcock report, inspection report, September 18, 1985, Job Number 188702999. I don't expect you to be familiar with this, I'm going to just ask you some general questions regarding it.

Although it does mention Bureau Veritas, it indicates a previous history for all the boilers from '68 to 1974, detailed in a summary report by Bureau Veritas Paris. It notes that small blisters in fittings and pittings were found in weld seams in the upper drums in December of 1970.

In 1973 cracks were found in the lower drum of Boiler 24, they fixed them by grinding. February '74 corrosion blisters again discovered in longitudinal welds of lower drums. June '82 -- it jumps up to June of '82 to discovering corrosion cracks in longitudinal and circumference welds of all the boilers. This was discovered by Magna Flux.

My question for you is once a class society becomes aware of an issue or a problem, how do they track that problem throughout the history of the vessel? That's the first question.

A When there's a problem, in general there are two -- I would say three possibilities. First, wait and see. If there is a problem that doesn't seem too serious, but we want to monitor it, so we would enter a recommendation or a note in the certificate saying this we want to reinspect every year or every two years to monitor the evolution of the problem. It can be a boiler, it can be corrosion in a tank, it can be anything on the ship.

The second possibility, provisional repairs

are made immediately or maybe any time. Provisional repairs means it's not permanent repairs. Is there is a provisional repair, there will be at the same time a note or recommendation saying provisional repairs to be -- definitive repairs to be provided by such date. Could be the next technical stop, the next dry dock, you know.

The third step, definitely repairs. Definitely repairs is done with specialists where either the equipment is replaced or it is repaired in such a way that it is considered as final. It is tested after repairs. If specific competency, such as (inaudible) are requested, specialists will come to attend and check the repairs and once it is declared final, it is final. We don't track it anymore.

Q You don't track it anymore?

A No. We will track it if the specialist doing the repairs say we recommend that this being reassessed every two years, five years, ten years. But if the repairs is considered as good enough by the specialist and by the controls which have been done on the repairs, there is no reason to put a recommendation to be reinspected five years later.

Q Later on when we're looking at this issue, though, if there is anything written, we should be able to find it on one of the certificates for the boilers. Is that --

A Yeah. If at any point repairs have been -- if a recommendation has been added to a repair, it will appear on the certificate.

Q Okay. This corporate history that you just mentioned of an issue, is that tracked anywhere? Is that available for the new surveyor to read up? Other than looking at certificates, do you have a database or do you have files on ships that can tell us about these histories?

A The history of anything open.

Q Just open?

A Yeah.

Q But how about things that were closed, is that kept anywhere?

A It is in the ship's file, but it is not accessible for preview before a survey. When the surveyor prepares a survey, he looks at the ship file with two objectives, meaning one to check the class status, what is due, what are the surveys which are due so he really can prepare himself. Two, are there any recommendations, which means are there repairs due also at the same time of the survey.

Q Does the ship operator, the engineers or whomever, have a responsibility to keep that ship file complete? For instance, this is an old BV report.
A Sir, I'm missing your question.
Q Does the ship operator have a responsibility to maintain a complete file for the BV inspector when he comes on board?
A They have the responsibility to inform the BV class of anything which will affect the class. They can organize themselves as they want.
Q I understand that. There's the theoretical and then what happens in real life. For the record, I'm looking at a BV Marine Department report, 1984, either September or March, there's several dates, I'm not sure which date of the report it is. The inspection occurred in September 1984.
The report details an inspection of the various boilers, for instance Boiler 21 indicates cracks were found in the inner and outer longitudinal weld and seams, in the circumference seam, the upper drum.
Lower small drum Boiler 23 cracks in inner and outer longitudinal seams, all cracks grinded off and so on.
A Yes.
Q My question is should this document have been available to any inspectors when they come on board and review the history of the vessel?
A No. If there is nothing outstanding. If there is a (inaudible) with a remark pending, it will be on the certificate.
Q So once an issue is resolved --
A For example, here (inaudible) thickness after grinding, no comment, so when the standard has been -- there is no request for further inspection.
Q Do you think it would be a good idea for inspectors, I'm just speaking generally, not necessarily just for the Norway, but do you think it would be a good idea for inspectors to have this type of knowledge when they come on board the vessels?
A (No response.)
Q You have a new inspector in Miami. He doesn't know all the issues. Is this a good thing to share with him?
A He will have to look at everything which is pending. The inspector going on board for an annual survey is not requested to check the whole history of all the problems which happened in the past and which have been solved in the past.

Q Okay.
A He will be made aware of problem which happen in the past and have not yet been solved.
Q Let's move up a few years. I'm looking at one of your documents, the 1987 request. It's to BV from the shipyard, detailing welding procedures to correct --
A That's a document I brought today.
Q Yes. To correct cracks in drums. Should we expect to find a document like this for every occasion in which repairs were made to different drums?
A If other procedures have been used, they should have been also approved. If the same procedure has been used many times, the reports will refer to the process.
Q So then is it correct for me to think that BV may not be notified of all repairs that may have taken place within a boiler?
A This we'll know.
Q I'm trying to find out if there's a responsibility for them to inform you of such repairs.
A Yes. I mentioned that when I presented the basic philosophy of the rules. First the client, as I said before, the client has to maintain the condition of the unit after surveys and to inform the society without delay of circumstances which may affect the appraisement, which means if you have a defect and you repair it, it affects compliance with the rules and it is repeated here.
"The client is to inform the society without delay of circumstances which may cause date or the extent of the surveys to be changed." When the surveyor arrives on board, if repairs have been done between the survey to come and the previous survey, he has to be made aware.
Q Are you aware of any communications from Norwegian Cruise Lines to BV regarding additional problems with the boilers, other than what was indicated in this repair request?
A Personally I'm not, but we might find a trace in the report stating that they have been other repairs carried out.
Q That documentation might be available at the office?
A Yes. I can say without being exhaustive, I looked through some of the files and the reports. There is trace of additional repairs, maybe not welding, but after that date.
Q For the record, I'm looking at a certificate,

I guess this is your boiler certificate?
A Mm-hmm.
Q And it states a working pressure of 71.5 kilograms per centimeter square, which I think is an equivalent of 70 bar?
A Yes. More or less.
Q Where can we find documents indicating that the operating pressure of the boiler has been changed to 60 bar and if that's available? Is that something that you would know, if they did that?
A They can operate at the pressure they want without -- below this pressure of course, not above that, without giving official notice to BV.
Now, if they want to de-rate officially the boiler and have us issue a certificate not at 70 but at 65, then it has to be an official notification. But they can have a certificate saying 70, which is the maximum pressure, and they can operate at 65 if they want.
Q Right.
A This is upper limit.
Q I understand. Can you recall any other documents that might have shown a different working pressure?
A It can be recorded in a survey report. It's a principle of declaration. If the owner had said -- I don't know if we have the documents from NCL saying we operate at 65, but it is possible.
Q As a marine engineer, what would be a reason to lower the operating pressure?
A I'm really not conversant on boilers.
Q How about pressure vessels in general?
A I don't know if it's a question of economy or -- if you want to reduce the pressure of a boiler, I'm not the chief engineer.
Q Okay. If I was concerned about the strength of a boiler, I might lower the working pressure. Does that make sense a little bit?
A It is one possibility, yes.
Q I know as we say in the U.S., we beat this horse to death, the idea of the term "complete survey." We've talked about that over and over again.
A That's right.
Q I guess what we need to know without a doubt is that does complete mean a visual inspection inside the drums or a hydro at one and a half times the operating pressure? If I can't visually inspect the drum, am I required to hydro it to a higher pressure as an alternative?

A I think the question should be asked to the chief surveyor, not to me, because I'm not involved in the surveys myself. What "complete" means, reference to the paragraph of the rules which describe what was called a complete survey and I think we can provide you with these rules.

Q Okay.

A I think this is already done. But the wording itself is not definition.

Q I think I've asked this already, but if a report came along, and I'm looking at a 1993 report regarding corrosion, pittings and remaining material thickness measurements of a boiler, in this case Boiler 24. It's by some German firm I think, it's unknown.

If a report like this had interesting measurements of the circumference welds which were previously noticed in a BV report like the one I showed, would you expect this type of information to be communicated with BV?

A Yes. If it affects the class.

Q If it affected the class?

A Yes.

Q Do you believe that the shipping company has enough information to make that determination as to an affect of class? I mean we're getting down to very technical detail in terms of thicknesses of materials and such. How do we know that they have enough technical knowledge that they need to refer this information to the class society?

A They can ask us if they are in doubt.

Q If they're in doubt. Is that an expectation, that they ask you?

A Yeah. It is their role.

Q It is their role?

A Their role.

MR. OLSEN: Thank you. I have no further questions.

MR. PAILLACAR: Carlos Paillacar, Coast Guard Miami.

EXAMINATION

BY MR. PAILLACAR:

Q You're going to have to (inaudible)?

A In french, yes.

Q Those would be the headers then?

A You have to ask Michel for that.

MR. PAILLACAR: Would those be the headers?

MR. LAMBERT: It is a generator. It means superior when it's (inaudible) lateral when it's (inaudible). According to where you see --

MR. PAILLACAR: Right.
BY MR. PAILLACAR:
Q Those would be the drums, because in this survey that I have here, Bureau Veritas report of service dated 20th of December 1966, there's a report from Mr. J. Patel that states that he visually inspected from the inside the drums and he actually took pictures of corrosion and blisters along the welds inside specifically Boiler 23. Is there any way we can find out where these pictures are?
A From 1966? We can try. We'll do our best.
Q Right. Also, I notice that --
A You will have to give me the reference later.
Q It's right there. This says that they were photographed to monitor the evolution of this corrosion pits in the weld. Is there any reason why -- this is a 1966 report, why the safety valves might have been tested that year and then again for Boiler 23 were tested the following year in the survey of machinery? Because that's the only boiler that was tested twice, actually, in two consecutive machinery surveys.
A They are always free to ask for pressure test whenever he wants. I cannot answer more than that.
Q In '67 23 is the only boiler that was retested twice, as far as the pressure.
A Is the same report?
Q No, it's a different report. This is 1967, this is November 22, 1967. Actually, no, is December 15 '67.
A November or December, yes.
Q It just caught my attention that that was the only pressure vessel that the safety valves were tested twice.
A Where is the reference to the pictures?
Q Right there. For the future evolution of the corrosion.
MR. LAMBERT: You have (inaudible) or you need something?
MR. PAILLACAR: I just want to know if there's any way that we can get those pictures.
MR. LAMBERT: Okay.
THE WITNESS: I will try.
MR. PAILLACAR: Okay. Thank you.
MR. ROTH-ROFFY: For the record, the previous discussion related to survey reports dated December 20, 1966 in Lahar, France.
MR. OELSCHLEGEL: Chris Oelschlegel, Coast Guard.

EXAMINATION

BY MR. OELSCHLEGEL:

Q It's time to beat the dead horse some more. The BV rules describe a complete boiler survey as basically examining the fire sides and the water sides of a boiler and they also describe -- the complete boiler survey also describes the fire side and the water side as opening up the drums for inspection as well. In other words, opening up the steam drum, opening up the water wall. I read that in the rules.

The rules also provide for or they specifically state that if the boiler has not been fully surveyed internally that you can do a hydro examination in lieu of an internal examination of key boiler components, including drums.

My question is would there be some point over the life of the boilers, let's say that the surveyor had decided to substitute a hydro instead of an internal examination of the drums. Would there be some point at in the life of the boilers that it would be time to say hey, it would be time to do an internal examination of the drums? Or would it be acceptable to substitute hydro for the life of the boiler?

MR. ROTH-ROFFY: I'm sorry, this tape is about to run out. If your answer is more than one word or two words, then we probably need to switch the tape, so we'll take a pause now.

(Off the record discussion.)

MR. ROTH-ROFFY: Okay. It's about five minutes of 4:00. We've turned over the tape and are resuming our interview of Mr. Francois Teissier. Chris Oelschlegel was asking his question.

BY MR. OELSCHLEGEL:

Q The rules describe a complete boiler survey as doing fire sides and water sides, which includes internal examinations of the drums. The rules also allow for a hydro if the boiler internals haven't been examined.

Would you expect at some point over the life of the boiler that an internal examination would be performed or would it be acceptable to have a hydro examination substituted for the life of the boiler?

A To my knowledge, and I repeat I am not a surveyor so I'm not 100 percent familiar with all the rules, to my knowledge, there is no such requirements in the rules today, which means the surveyor is free to interpret the rules as he wants, as he feels good for the boiler.

Q Thank you. I have one other question. Do the rules allow for what we would call or what I've

heard other classification societies call continuous surveys of boilers?

In other words, if I start a complete boiler survey on a particular boiler on a ship, can I do a partial of the boiler and come back and finish it at a later time or do I need to do it all at one time?

A Also to my knowledge the boilers are not cut in small pieces for continuous survey. It doesn't exclude that if the surveyor needed to make a test of the safety valves three months before the survey, he can say I recommend to validate this test for the next survey, which would be not continuous but just say partial survey. It is not really organized like that for boiler survey.

MR. OELSCHLEGEL: That's all I have for now. Thank you.

MR. HISLOP: Kevin Hislop.

EXAMINATION

BY MR. HISLOP:

Q My first question, Francois, is would you call yourself a naval architect?

A Unfortunately, not. It was my dream when I was young, but I did not attend a good school.

Q I personally give you an update.

A My education was oriented towards naval architecture, but it was not formally as complete as architecture and was more oriented to sea keeping and hydrodynamic studies.

Q So if you're not a marine engineer and not a naval architect, how would you describe yourself?

A Well, what we call in France engineer, which means master level in technologies of different kinds, general education technology.

Q Okay. I understand. Just for your information, during the period of 1996 to the year 2000 I myself was a class surveyor and during that period I did not survey main boilers because of my experience record and you understand "experience record," because you described it.

I'd like to, just for your information, just take the liberty of quoting from a document I have here entitled "Marine Division Survey Procedures Manual."

I don't want any emphasis to be placed upon this document as such, because I'm not longer an employee with this classification society and it's dated July 1997. But it was in fact in effect when I was working for the classification society. I just wanted to quote something from here, just to get your comment.

This is a section entitled "Main and Auxiliary Machinery." The section is also subtitled "Survey of Boilers, Thermal Oil Heaters and Hot Water Heaters."

The paragraph here I want to refer to is specifically "Examination of Boilers, Thermal Oil Heaters and Hot Water Heaters."

It says, and I'll just quote here, "Where the construction of a boiler does not allow direct visual internal examination of the shell, drums or headers, the surveyor should be satisfied that the boiler is in a safe working condition by resorting to remote viewing instruments, ultrasonic examination or hydraulic testing at 1.4 times the working pressure."

Would you say that this is condescend with the requirements of BV?

A From what I just discussed with the first question and from what I know of the guidelines for conducting surveys of boilers, it seems quite equivalent.

Q It seems quite equivalent. Thank you.

MR. ROTH-ROFFY: Ken, just make a note unless you feel it's essential to interrupt. Go ahead, Ken.

MR. OLSEN: It should be noted that the document that you were referring to, the class society, was that Lloyds of London?

MR. HISLOP: I did actually say Lloyds Register.

MR. OLSEN: You did say it?

MR. HISLOP: Yes.

MR. OLSEN: I'm sorry.

MR. RILEY: John Riley. Oh, I'm sorry.

BY MR. HISLOP:

Q Does BV have planned maintenance scheme approvals?

A I believe the regions, yes.

Q Does BV to your knowledge do audits of these planned maintenance schemes?

A I don't know how it works, because I'm not involved directly in that.

Q Are you aware of any bulletins issued by headquarters to BV offices about experience with certain pieces of equipment?

A No. The quality system of BV for the information provided to the surveyors is (inaudible) which has some procedures (inaudible) instructions for surveys and guidelines for the surveyors which are amended as necessary. It can be every year, it can be more or less, depending on the topics.

When some information has to be quickly circulated to the network and we cannot wait for the next revision of the guidelines, we issue a circular letter and it can be a new regulation, it can be an interpretation of a regulation, it can be anything.

Q Finally, the SSOM is --

A McBride.

Q McBride?

A Correct.

MR. RILEY: Please arrange for the opportunity this week to interview Mr. McBride.

THE WITNESS: Within the scope of the investigation?

MR. ROTH-ROFFY: We're going to have to talk about this off the record.

MR. RILEY: Okay.

(Off the record discussion.)

MR. ROTH-ROFFY: Okay. Tom Roth-Roffy here. We had a little glitch with the tape. It stopped for no reason. Kevin, you're finished?

MR. HISLOP: Yes.

MR. ROTH-ROFFY: John Riley?

MR. RILEY: John Riley.

EXAMINATION

BY MR. RILEY:

Q Can I confirm that Bureau Veritas is a member of IAX (phonetic)?

A Yes, it is.

Q Thank you. Are you aware of any deviations in the BV rules from the general IAX rules regarding boilers?

A I'm not aware.

Q You're not aware. Who would know, please, if there were any deviations between BV and IAX on main boilers?

A The head office, I think the department in charge of the implementation of the rules.

Q Thank you. We were talking with your colleagues the other day that a chief engineer with suitable experience and qualifications is permitted to do classification type surveys within fairly strict guidelines.

For example, if the chief engineer on a ship does certain units on a diesel engine, the guidelines of the class to my knowledge would say for example that the chief engineer could go 50 percent of the units, but a class surveyor would have to do the inspection of the other 50 percent of the units of that engine.

I'm giving you that as a reference of the

sort of --
A Are you talking about BV guidelines?
Q I'm talking about BV, yes.
A Okay.
Q But I'm talking generally from my knowledge and experience as a non-exclusive classification surveyor for other societies, I've never worked for BV.
I refer to this for reference as an example of some of the controls that are in the classification system. I remind you that I've not been allowed to see the TNS document that's been referred to in these interviews, so I do not know the contents of the guidelines of BV for their boilers.
With that as background, my question is whether the reporting of the individual surveyors over the months and years as previously referred to gives BV any control or knowledge as to when any particular drum or header has been internally thoroughly examined by a surveyor?
A Repeat, please? I'm sorry, it was quite a long question.
Q Yes, I apologize, but I had to set the setting, because I have not seen the TNS, so I'm unaware of your guidelines. I have not worked for BV.
I gave an example of the type of control to insure that BV, when for example they delegate surveys to a chief engineer, there is some control in the system by an exclusive surveyor having to see some parts of the engine and then that leads on to with that type of control in the administration of classification surveys, does BV have a way of noting or recording or guidelines to a surveyor so that there is an accurate record of when internal, close up, thorough surveys have been carried out in a stream drum, a water drum or a wall header?
A I'm try to answer point-by-point. This is delegation to chief engineer, first it does not apply to everything on the ship. I'll have to check, but I'm not sure that the boiler can be delegated to the chief engineer.
Q Sorry to interrupt you. I merely gave that example of diesel engines. It's not a question, it's an example of the type of control that is exercised by a class society.
A Okay. As far as I remember, the delegation to the chief is such that if a chief inspection during one class cycle, the next cycle he cannot inspect.
Q Right.
A So a BV surveyor would inspect the next

cycle. But of course when the chief inspect an item, he has to supply the documentation explaining what has been done, measurements, pictures, spare parts used, whatever he wants. He has to explain to the surveyor what has been done. As a control, he cannot do two consecutive survey on the same item.

Q Right. Recognizing that control, how does BV know when a surveyor who has, from what you've said previously, a lot of discretion, how do you know when a steam drum is being adequately surveyed or tested or a water drum or a header?

A I come back to my first answer. I don't think that the steam drum can be delegated to the chief engineer.

Q No, no. I'm not suggesting that they can be. How do you know when your exclusive surveyors -- the chief engineer cannot survey a boiler in any classification side, to the best of my knowledge.

I'm trying to find out how the control of BV of their surveyors is so that you know the thoroughness and adequacy of the examinations of main boilers by BV year-to-year, recognizing that you give some discretion to your surveyors?

A Look at the reports.

Q Do your reports indicate when there's been an internal examination of a steam drum?

A If there is something to notice, to highlight, there will be a comment --

Q But if the surveyor hasn't been in --

MR. SWERDLOFF: Let him finish.

MR. RILEY: Sorry. My apologies.

THE WITNESS: The scope of the report is not to write everything which has been done, it is to check -- to confirm that the scope of -- that the condition of the equipment meets the requirements of the rules.

So if you see something that is good, maybe you can write it is good or you can write nothing and just validate the certificate again. That what is -- even (inaudible) is not public, the form of the report is available to NCL and so you can see -- NCL can see what has been done on the boiler at each survey.

You will see report where it is written that the drums have been inspected and some reports will say there was a hydro test.

BY MR. RILEY:

Q Thank you. Again, I repeat that I've not had the benefit of seeing the TNS guidelines. When a surveyor goes on board a ship to do a boiler survey, do you expect him to review the maintenance records on the

boiler since the prior survey?
A No. I expect the chief engineer or the owner's representative to explain to the surveyor what has been significant in the operation and the maintenance of the boilers since the last survey.
The surveyor can ask to look at the documents, but the duty of the chief or the person representing the owner is to inform the surveyor of anything which could have happened since the last survey.
Q Thank you. Would you expect the surveyor to examine the boiler water test records and chemical treatment of the boilers --
A He may.
Q -- as part of his survey?
A He may, but the same thing, if there is something abnormal, he should be told right away, before he even look at the documents.
Q Thank you. With the main boilers of a ship such as the Norway, are all of the boiler surveys and inspections classification items or are there any aspects of those surveys and inspections which are statutory surveys on behalf the government of the Bahamas?
A My first answer would be that for me it's only classification, but I think maybe I should check the convention to see what does the safety certificate include and whether or not there is a link with the boiler. But I cannot answer 100 percent sure right now.
Q That's fine. That's something we can review. Thank you very much. Excuse me while I just look at my notes.
A Okay.
Q Thank you. (Reviewing document.) When Mr. Olsen asked you about once you become aware of a problem how you track this through the history of the vessel, you gave us three examples and then you made a comment about if the specialist recommends reassessment after a certain time BV will then make a recommendation to the owner.
Does this mean then that Bureau Veritas does not make recommendations from their surveyors independently, but rely on specialist contractors to make the recommendations for you?
A On some issue, yes. Flux control for example would be not done by BV surveyor, it will be done by company hired specializing and we would rely on their report to validate welding after repairs, for example.

Q But aren't any repair procedures, selection of materials, pre-heating, post heating, isn't the contractor relying on the technical resources and R&D of the classification societies to come up with an optimum repair on behalf of the owner in the first place? In other words, looking to you for your expertise?

A No, is not the rules. We are not consultant, we are not technical advisor.

Q Why should an owner class his ships with BV then?

A As I told you, because having a certificate which says that the ship complies with the BV rules gives some value to the ship and gives access to some insurance and flag recognition, but we do not advise the owners on how to maintain, what they should do, how they should do it. We observe the ship and we compare it to the rules.

Q But you agree though that an owner has an obligation to get BV approval and guidance on repair procedures before carrying out significant repairs on a main boiler? In other words, looking to the authority of the BV?

A No. If the owner does something, in order to compare this repair to our rules, we want to know how he does it. That's the only reason for what we ask for for these repair procedures, for example.

Q Thank you.

A I think I will make copies of these general conditions for everybody, because there are a few sentences which really defines the scope of the class society and the role.

Q Yes.

A We could have a separate contract with an owner on a ship we don't class asking for providing technical assistance, but this is not classification.

Q Similar to Kevin Hislop, Mr. Hislop, my background was originally in England and the classification societies were originally formed to act as sort of an independent agency on behalf of the underwriters insuring risks regarding all aspects of the design, construction and ongoing fit condition of a vessel for operation.

So what you're saying about the role of BV is unusual to me and I apologize.

A I guess if you look at other class societies, they have exactly the same philosophy. I don't know the (inaudible) but we all do the same job.

Q Can I please ask one more question? As a

surveyor mainly involved with accidents and casualties or machinery break downs, whatever, normally as part of the process I would automatically ask for a copy of the current classification society status printout, which would give the status, of course, of all the fundamental certificates, statutory certificates and class certificates, dry docking, tail shaft, et cetera.

It would normally list overdue surveys, outstanding recommendations, conditions of class and then for example with NKK or DNV or with Lloyds Registry of Shipping there would be special memoranda where things which -- such as fractures that have been referred to or cracks referred to by Mr. Olsen in some of these documents that I have not yet seen, I would normally expect those to become a special memoranda because of the importance of the item.

Does Bureau Veritas have such a similar guideline for people reviewing the class records of a vessel class with BV and if so, where would we find it?

A On the certificate you will find the (inaudible) which is a simple description of which survey, occasional survey or annual survey. You will have the recommendations where most of the time it is a request for repairs before a date and then you have what we call the memorandum, which are a remark which has to be permanent, which request repairs.

For example, for a diesel engine typically it's avoid RPM between 65 and 75. That would be on the memorandum on the machinery certificate.

Q Right.

A As I explained before, if there is no history of all the repairs which have been existing in the past, the problems, once they have been solved and considered final repairs do not appear anymore on the certificate.

Q If on a diesel engine ship for example you had a major casualty and you ground one of the crank pin one millimeter, two millimeters under size, would Bureau Veritas make that a special memorandum for the surveyors to know?

A If you are to repair a bearing?

Q If you had to grind undersize a journal on a main engine crank shaft, for example, if you know, I'm sorry, I'm forgetting you're not an engineer, but would that become -- that sort of item of that importance be in the memoranda?

A I don't know how it will be reported.

Q I'm just trying to get a feel for whether you leave boiler cracks and similar important data you see.

A I don't know how this will be reported. Either it is -- you mean so the pin will be below?
Q Yes. Defects will be machined off, but it would be a permanent note for any surveyor to know.
A Do you mean are we going to be below the minimum diameter?
Q No, no. But is there an alert of a special situation to an attending surveyor?
A I think if the machining is accepted and the result is in conformity with the class, once it is done, it is done. I don't think it will be in the certificate. You will see a result where it has been done, but --
Q I see. I'm just trying to get a feel for how BV operates as compared with the other IAX members. Your surveyors such as Mr. McBride and Mr. Hofseth, when they are asked to go to a vessel to do a survey, can they access the up-to-date class records over the internet and have an immediate picture of what may be outstanding or a problem prior to going to a vessel as opposed to relying on talking to the chief engineer when they get to the ship?
A They check on the internet. They check everything which is recorded as due surveys and outstanding recommendations.
Q Has anybody involved in this investigation asked for the printouts on the Norway in all of these aspects?
A To my knowledge, no.
MR. LAMBERT: I not understood your question. Please repeat.
THE WITNESS: The position of the survey which have been done and next year review and continuous survey items. I think you didn't ask for that.
MR. ROTH-ROFFY: Tom Roth-Roffy. Actually, I think we've been provided a copy from the operator, from the ship's documents of the current status of the survey.
MR. RILEY: Thank you. I've not seen it. Thank you very much. That's it, thank you.

FURTHER EXAMINATION

BY MR. ROTH-ROFFY:
Q Sir, if we wanted to talk with Mr. McBride's technical supervisor, who would we talk to? At the headquarters or you said the region?
A Yes, it will be either Mr. Ersin Eren. E-r-s-i-n, last name Eren -- E-r-e-n. Or the director of Ships in Service Division, who is the head of Mr. Eren,

Mr. Claude -- C-l-a-u-d-e Maillot -- M-i-l-l-o-t.
Q Mr. Eren, what is his title?
A Well, as I told you, we have four department, MO-1, MO-2, MO-3, MO-4 because that was the name, each of them dealing with a specific geographical area, supervising this area, so he's the head of Department MO-3, Marine Operation 3, which includes USA.
And Mr. Millot is director of DNS. DNS is Division Ships in Service, a position to the new building division.
Q Would both of these gentlemen be located it --
A Head office in Paris.
MR. ROTH-ROFFY: In Paris, okay. I think that's all I have. Brian, anything?
MR. CURTIS: I've got a few questions.
FURTHER EXAMINATION
BY MR. CURTIS:
Q Could you describe for us how the rates are established for a classification society to perform services on a vessel?
A The rates?
Q Yeah. The fees.
A It's based -- for machinery, it's based on the power, the scale. The bigger the ship is, the highest the fees are.
Annual it is this much for a ship which has a LBC of so much, the annual would be -- annual survey would be that much, the class renewal would be that much. For a diesel it would be according to the power, shaft power. For boiler, I think it's to the -- I don't know, power or --
Q If you had a freight ship with the same machinery arrangement, would the rates be less or more or are there other things to consider?
A No. For the -- repeat the question, because I'm confusing new building and ships in service. I think there is a -- yes, there is a classification by type of ship. Cargo could be 1, tanker will be 1.2, passenger ship would be .16, all depending on the type of the ship. Is both for new construction and ships in service.
Q Are cruise ships, liner type ships, do they generate more revenue for the classification society than freight ships in general?
A Well, we haven't completely (inaudible), but of course the value is higher, but we spend much more time, so in term of ratio, fees compared to the number of hours, I guess it is -- this is how the scale has

been built, to give approximately the same fee because of number of hours.

Q Could you tell us if you're aware of any instances where BV has dropped a customer because of conditions on board the vessel?

A Mm-hmm.

Q What type of conditions were present that would cause a class society to drop a customer?

A I think either a ship doesn't comply with recommendation. It's not -- you cannot go on board a ship, look at the ship and say I don't want it. If the surveyor is not satisfied with the ship, he will put recommendation for repairs. If the owner doesn't comply, if he chooses not to do the repairs, then the class is automatically suspended the day the repairs become overdue.

Q Okay.

A Then the owner has a chance. He might want to catch up, do the repair, then we can come on board and we will reinstate class. But if he does nothing, the class remains suspended and after a while it is completely withdrawn, which means he cannot come back.

Q Does BV at their headquarters level have risk management tools or risk management methodologies that are used to determine risks, whether in machinery space or other shipboard operations?

A Yes. We have an optional class notation that there is some machinery which is becoming more and more popular. The concept of this class notation is to start from the risk analysis of the machinery systems, taking into account of course the arrangement, but also the type of equipment, the reliability of the equipment from the comments we get or from the manufacturers of the equipment and from that risk analysis -- and also because there is reliability of this equipment, the arrangement of this equipment, the consequences of any failure and we compare that to planned maintenance system provided by the operator and we discuss with the operator that you optimize this system according to the results of the risk analysis, which means we could increase some surveys and decrease other items because the risk of failure or the consequences of a failure or more or less --

Q Could you take an older operating vessel like the Norway and plug it into that system to do an evaluation?

A Nothing is impossible, it's a question of time. Because it's a time consuming process which usually is done over several weeks on a classic

operation.
Q If the shaft alley flooded, say one of their propeller glands failed and they couldn't keep up with the pumping and they had to secure the shaft alley door, would that be something that your organization would be interested in, in terms of the company reporting to you?
A Certainly.
Q Certainly. If a safety system developed extensive leaks throughout it, like a fire main for instance, would that be something that you'd be interested in?
A We would be.
Q And they should in affect contact you when these conditions exist?
A Yes. All depends on the seriousness of the defects, of course. But when you say the safety system is failing, it means it will fail. If safety alarm is not ringing and somebody says --
Q Major issues.
A Yes.
Q If the water in the bilges came up to the deck plates, that would be a condition that may require notification?
A Yes. But don't forget also there is now the ISM and there is on the ship's system supposed to use or implement the ISM system to report this.
Q That brings up another question. Since the implementation of ISM on board cruise vessels, passenger ships, has the level of intensity of classification inspection decreased or has it stayed the same?
A That's difficult for me to answer. I don't have any analogies for you. What means "level of intensity"?
Q Since ISM is supposed to catch, identify, report and correct problematic conditions throughout the operation of the vessel, is now the role of the inspector reduced?
A I don't think so. We can look at the statistics and for example, class statistics and we have discussed with U.S. Coast Guard in Washington, there seems to be a trend that class related attention are much lower today than they were ten years ago.
Q Okay.
A Is it due only to ISM? I don't know. Is it due to the implement of the work of the class societies or improvement of the operator and the maintenance, maybe a little bit of each, but is difficult to

identify the exact weight of ISM in this thing.
MR. CURTIS: Okay. No further questions.
MR. HISLOP: I have just one.
MR. ROTH-ROFFY: Just to advise you, Kevin, we're getting close to the end of the tape.
MR. HISLOP: This is a very quick one. Just very quick.
MR. ROTH-ROFFY: Okay.
FURTHER EXAMINATION
BY MR. HISLOP:
Q When BV goes on board the Norway to do the passenger ship safety renewal survey, how long does it take them to do it and how many surveyors go on board?
A Several days. It can be one surveyor is on board for one or two weeks, he can do that in two cruises, or it can be two supervisors during a week, it depends, but it's a long process.
MR. HISLOP: Thank you.
MR. RILEY: John Riley.
FURTHER EXAMINATION
BY MR. RILEY:
Q Are chief engineers qualified and entitled to carry out any surveys on any main boilers or components thereof?
A I think we discussed that. I would like to check, but I think not. I think the boilers are not delegated, but we should check by the rules.
Q So they have to rely on the BV surveyor. Do Bureau Veritas keep the records of a ship such as the Norway from the initial design approval throughout the life of the ship?
A Yes.
Q So all of these records, from 1958 approximately, will be available somewhere at BV?
A The part before the ship came here is not here.
Q But in Paris then?
A It will be in Paris.
Q Thank you. Are you aware of any other classification societies approving this type and model of boiler?
A The ship was built as a dual class, so ABS has also approved the boilers and I think their rules have those reference at that time. You can check that from the drawings.
Q Do you mean by that that the ABS rules were the governing criteria --
(Off the record discussion.)
MR. ROTH-ROFFY: Okay. It's about 20 minutes

of 5:00 and we're on tape three, side three of our interview with Mr. Teissier. John Riley was asking his question.

MR. RILEY: John Riley.

BY MR. RILEY:

Q You just informed us, Mr. Teissier, that the vessel was built to dual classification, BV and ABS. Did I then understand you correctly that the acceptance or the approval of the design and manufacture of the boiler was primarily in accordance with the rules of American Bureau of Shipping?

A This is what I have seen on one drawing brought by Michel Lambert, so I think we can check on his drawing, but I know that the reference of the ABS rules is made on this drawing.

Q Does that mean then that the design approval was initially by ABS and then by Bureau Veritas, with the American technology taking the lead, shall we say?

A No, it's difficult to say, because in case of dual classification, it's a case-by-case basis and we could say there must have been some arrangement to say okay, you approve this first, we approve this first and then we cross-check. I don't know exactly, we will have to look at the correspondence of '58, something like that, to check exactly in which order the process has been made.

Q Thank you. If I may, please, can I just finish off with -- because of this information regarding the involvement of the American Bureau of Shipping, may I please ask you whether the design modifications which were contemplated and drawings prepared for the sliding feet of Boiler 14, approximately in 1966 I have seen and I think the drawings are out for copying, a three sliding foot arrangement for the header where the center -- sorry, the center foot is fixed and the fore and aft feet are sliding or appear to be so and I've also seen a variation on that arrangement involving five feet.

Do you know please whether the American Bureau of Shipping was involved in that design modification and investigation and presumably, the identification of the cause of why those modifications were contemplated and needed?

A I think it is on the report which I have brought today. Sagging was noticed on Boiler 14 a few years after the ship was in service and the first reaction was to prepare an additional support in the middle of the header.

Then further surveys confirmed that the

sagging was steady and was not increasing and the shipyard confirmed also at a later stage that this deformation was from origin.

At that point it was -- I think this was discussed with the owners and the shipyard and it was decided that the additional support was not necessary.

Concerning ABS, I don't know if they were involved at that time and I don't know if the class, if the dual class had been maintained up to that date. It is possible that the ship had been built under dual class and then the owners can choose not to maintain both class. Am I clear on this last point?

Q Yes. Thank you. I'm aware that for commercial reasons and insurance coverage reasons in some cases insurance underwriters will require a dual classification, recognizing the difference in the scope of technical expertise and support by the different classification societies.

A final question, please. Can I please again request for us to have access and a copy of the TNS guidelines for surveyors, if you could please consider that, reconsider it?

MR. ROTH-ROFFY: We will reconsider it. I've been talking to counsel about it.

MR. RILEY: Thank you.

MR. OLSEN: Ken Olsen. I'll try to make this my last.

FURTHER EXAMINATION

BY MR. OLSEN:

Q If you have a boiler that's certificated for 70 bar maximum operating pressure and the pressure is lowered by the ship's crew to 60 bar for whatever reason, when hydrostatic tests are done because of internal repairs, should that pressure be 1.5 times the approved working pressure, certificated working pressure, or 1.5 times the pressure that the crew is now working with?

A I think it is 1.5 of the official.

Q That would be 1.5 of the 70?

A No. I think 50 percent additional pressure is applied only once. If is not then in service, I want to check the rules, but I think it will be 1.1.

Q 1.1 of the approved pressure or the reduced pressure?

A If we have no official statement, it will be of the official pressure. If there is a declaration that the ship is operated at 60, we will use 1.1 of 60.

Q And if there was a declaration, an official declaration of operating at 60 bar, there should be

some paperwork?
A There should be a declaration from the owner saying we operate at this pressure.
Q Okay. So we can conclude that it's 70 times 1.1 for internal repairs as an approved hydro pressure; is that correct? It's 70 times 1.1 or 77 bar?
A If nothing has been changed.
MR. OLSEN: Okay. Good. Thank you.
MR. RILEY: John Riley.
FURTHER EXAMINATION
BY MR. RILEY:
Q May I just clarify one point, please? So the 1.5 test pressure condition applied by Bureau Veritas is only on the initial production of the boiler prior to delivery to the vessel and then from then on it's never tested more than 1.1, according to your rules?
A I repeat this is from my discussion this last day with the surveyors. My memory is it is what has been explained to me. I suggest we go by the rules and check exactly the figures, but this is my best remembering of the discussions with the surveyors.
Q And this will be clearly defined in the rules?
A It will be.
MR. RILEY: Thank you.
MR. ROTH-ROFFY: Okay. I think we're finished now. It's about 10 minutes to 5:00 and we really appreciate you coming down and talking to us, sir.
THE WITNESS: No problem.
MR. ROTH-ROFFY: Thank you very much. That includes our interview of Mr. Francois Teissier. Thank you very much.
(Whereupon, at 4:50 p.m. the interview was concluded.)