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Friday, 8 March 2013
(10.00 am)
DR NEVILLE ANTHONY ARMSTRONG (on former oath)
Examination by MR MOK (continued)
THE CHAIRMAN: Good morning, Dr Armstrong.
A. Good morning.
THE CHAIRMAN: May I remind you that you continue to testify according to your original oath.
A. Thank you, Mr Chairman.
THE CHAIRMAN: Mr Mok.
MR MOK: Thank you, Mr Chairman.
Dr Armstrong, yesterday you said you wished to have a look at the provision in Cap 369AM. Can I invite you to have a quick look at that. This is legislation bundle 2, tab 11. If you could please turn to page 59. This is part of schedule 1. Have you got that?
A. Yes. Thank you.
Q. If you look, please, at subparagraph (6) on this page, which deals with "Minimum space of bulkheads". That encapsulates or at least is one iteration of the 0.1L rule; is that correct?
A. Correct.
Q. And it is contained in schedule 1 as part and parcel of the rules which are required to be applied in calculating the floodable length.

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A. Correct, yes.
Q. So if you go back, please, to your second supplemental report at page 928 of the expert bundle, we were dealing with paragraph 12 --
A. Yes.
Q. -- where you say:
"A summary of the floodable length calculation for margin line immersion in accordance with schedule 1, as given by my spreadsheet for the vessel with a lightship according to the inclining experiment ..."
So the question I wish to ask you is, you agree that if you do do the calculation according to schedule 1, that would include the 0.1L rule in paragraph 6(6)?
A. No, Mr Mok, I do not agree. May I explain why?
Q. Yes, please.
A. Can we go back to schedule 1, please.
Q. Yes.
A. I'm referring to paragraph (6). Maybe first I can very briefly explain how the naval architect goes about positioning his bulkheads.
THE CHAIRMAN: Please do.
A. It is only very brief.
The location of the collision bulkhead is set by a formulation in the regulations at a particular distance. So he would usually start at the forward end

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with that bulkhead and then position a bulkhead behind that at some relevant distance, flood the compartment that he has made, and check whether the margin line was immersed. He may then adjust the position of the bulkhead to suit.
He would then go to the next bulkhead behind that and do the same thing. So he would work his way down the vessel, checking whether each compartment, when flooded, immersed the margin line or not.
When he came, in this example, to the tank room, he would have a forward bulkhead which was the after end of the engine room, and he would check that distance for what he needed for the tank room, put the bulkhead in, check that it met the margin line requirements, and locate a bulkhead there.
Q. Locate which bulkhead?
A. Sorry, the after end of the tank room.
Q. Right.
A. And position that where necessary. Assuming that that met the need for the margin line not to be immersed, that would then be a satisfactory location for the tank room.
He then comes to the next compartment, which is loosely called the aft peak compartment or steering gear compartment. But my reading of this regulation is that

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that is irrelevant because it says:
"If the distance between two adjacent main transverse bulkheads ..."
The after end of the peak compartment is not a bulkhead. It is a transom.
I'm aware that Marine Department may not interpret it that way, but that is how I interpret it.
Q. I see.
A. The aft peak bulkhead is required to be there under a separate part of the legislation.
Q. Right. When you say a separate part of the legislation, which part do you have in mind?
A. Thank you. I'm thinking of, in this case, 369 -- excuse me, Mr Chairman.
THE CHAIRMAN: Take your time.
A. I'm thinking of 369AM, regulation 7.
THE CHAIRMAN: Which of the legislation bundles do we find this in, Mr Mok?
MR MOK: It's the same tab.
MR BERESFORD: It's the same tab, page 8 of the regulations.
THE CHAIRMAN: But which bundle is it?
MR MOK: The same bundle. 3.
A. It's at the end of regulation 7. Subparagraphs (4) and (5).
Q. Which page are you looking at?

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A. I'm on page 8 of this document.
THE CHAIRMAN: Which tab is it?
MR MOK: Tab 11, Mr Chairman. Page 8.
Which regulation are you looking at?
A. Regulation 7(4).
THE CHAIRMAN: Yes.
A. "Every such ship shall be provided with a watertight after peak bulkhead ..."
And then the following subsection, (5):
"The stern gland of every such ship shall be situated in a watertight shaft tunnel ... The stern tube shall be enclosed ..."
I think the important part there is that Lamma IV was not a conventional ship, in that it had twin screws. And the stern tubes of course did not go through the aft peak compartment. So there needed to be some special interpretation for that vessel.
MR MOK: In what way?
A. Because it could not --
THE CHAIRMAN: Before you go on, I've yet to locate this provision. Regulation 11?
MR MOK: No, it's 7(4), Mr Chairman, on page 8.
THE CHAIRMAN: Thank you.
MR MOK: Can you start again, please, Dr Armstrong.
A. Yes. Subparagraph (4):

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"Every such ship shall be provided with a watertight after peak bulkhead ..."
And then it goes on to give some other provisions.
THE CHAIRMAN: Yes. So that's the separate requirement for this watertight aft peak bulkhead?
MR MOK: That's in relation to ocean-going vessels?
A. It is, and it's taken word for word from SOLAS.
Q. Yes.
A. Nevertheless, it's also in agreement with the documents that you have asked me to talk to yesterday.
Q. The new documents?
A. The new documents, yes. It says:
"Such bulkheads shall be watertight up to the bulkhead deck ..."
And then it allows it to be stopped if the subdivision is not thereby impaired. In fact, the bulkhead was taken up to the bulkhead deck.
There's then a requirement under subregulation (5) for the stern gland of the ship to be situated in a watertight shaft tunnel, and that in fact was done but it wasn't located in the after peak compartment, as would be normal on an ocean-going ship. So there was need for some special interpretation, I would suggest. Not that this regulation 7, I understand, was part of the legislation that was required for local vessels.

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Q. I have to say, Dr Armstrong, the view that you just expressed, it's quite at variance with I think the Marine Department's understanding of the provisions. So I think it is worthwhile making this a little clearer.
What you are saying is that when you apply the 0.1L rule in paragraph 6(6) of schedule 1, the transom should not be considered as a bulkhead for the purposes of that rule? Is that what you're saying?
A. That was my interpretation of it, Mr Mok, and I said that in my very first report.
Q. Right.
A. And I was aware that the Marine Department representatives disagreed with that.
Q. Yes. And you do agree that this is a question of interpretation?
A. I don't agree that a bulkhead can be a transom.
Q. No, but it's still a question of interpretation whether or not the rule in subparagraph (6) should be applied as the Marine Department understands it or as you understand it? It's a question of difference of interpretation?
A. Yes, made more confusing by the fact that at the end of the day, the 0.1L has its origins from the extent of damage that is assumed. This comes from a statement that the length of damage shall be -- and then it gives

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a number of options, and includes 0.1L, whichever is the least.
Q. Do you have in mind the paragraph in schedule 3?
A. In schedule 3. It's a damage stability requirement.
Q. Can we have a look at that too, please.
A. Please do.
Q. It's page 63.
A. Section (3).
Q. Section 1(3)(a)?
A. Yes, 1(3)(a). So this is the extent of damage that is assumed in doing the damage stability calculations, and this is where I believe the 0.1L comes from when it's seen in the watertight subdivision regs. It makes sense to me anyway.
It becomes confusing because this was deleted in the fax that was -- can I remember the number? Page 1208?
THE CHAIRMAN: That's the 1 August 1994 fax.
A. I believe it is, yes. Where in the fax the distances of extent of damage were struck through and replaced with the words "one-compartment subdivision". In schedule 3. So I'm not disputing that that was perhaps a mistake, as has been stated. But that's how I interpreted it, that the 0.1 had been deleted from this fax as being a requirement. And the rule, as I read it, said "distances between bulkheads", so the aft peak

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compartment was not a compartment to which the 0.1L rule applied. I appreciate the Marine Department may have a different interpretation.
MR MOK: Yes. Just staying on page 63, paragraph (3)(a). Do you interpret the reference here to 0.1L as meaning something completely different from what we see in paragraph 6(6), or similar?
A. No, I think they have exactly the same origins.
Q. Right. But in terms of application -- let's say -- if the understanding is this, if the distance between two bulkheads is less than 0.1 -- sorry. If the distance between two bulkheads is less than 0.1L of the length of the ship, then so far as the calculation of damage stability is concerned, you would disregard one of the bulkheads separating that particular compartment and the next one? Do you agree that to be the effect?
A. Yes. It states that quite clearly, yes.
Q. So applying that to Lamma IV, where the distance between the transom, as you said, to the steering gear compartment bulkhead is less than 0.1L, do you say that that bulkhead that is at frame 1/2 should or should not be disregarded for the purposes of calculating the damage stability?
A. I believe it should be disregarded, because there is no requirement, as I read it, for that to be treated as

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a compartment, because it did not have watertight bulkheads at each end.
Q. I understand that point. But assuming that it was a watertight bulkhead, assuming for the time being, should it or should it not be disregarded for the purposes of the 0.1L rule?
A. Well, my point is, Mr Mok, that seen from -- I use the term "perspective of the tank room", when you're designing the tank room, it's more than 0.1L, therefore the watertight bulkhead in that location is entirely valid. But seen from the perspective of designing the aft peak bulkhead, I don't believe that needs to meet floodable length criteria because it is covered by an overarching rule which says "There shall be an aft peak bulkhead".
Q. Yes, but the rule, as you call it the after peak bulkhead rule, does not dictate any particular length or any particular location. So it doesn't help with the floodable length calculation or with the damage stability calculation. Just to have a bulkhead there doesn't tell you where it should be.
A. It may be a semantic argument, Mr Mok, because at the end of the day, the vessel would have passed with both the tank room and the aft peak compartment flooded when it was designed, in the condition in which it was built.

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THE CHAIRMAN: In 1996?
A. In 1996.
THE CHAIRMAN: The difference was the adding of lead plus the other weight on the vessel in 1998.
A. Correct, yes.
MR MOK: But I think for the purposes of this case, it is important to know that, assuming that there was a watertight bulkhead at frame 1/2, whether it would or would not have passed the 0.1L rule. It is important to know that, isn't it?
A. I don't think so. I think it's rather secondary, to be honest.
Q. All right. So let's say, contrary to your view, it may still be necessary to determine that -- assuming that -- what would your view be?
A. I think I've made my view quite clear, Mr Mok, that I don't think it was necessary for the aft peak compartment to meet the 0.1L requirement.
Q. That's your view?
A. Correct. With that as background, it's why I presented in my second report the conditions that you started out referring to, where I looked at the tank room on its own.
Q. So I have to put to you, Dr Armstrong, that the Marine Department disagrees with that interpretation --

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A. I understand that.
Q. -- and maybe it's a matter which should be left to the Commission.
A. I understand that, yes.
Q. Thank you. So, going back to the table on page 928 under "Tank room only", assuming, just assuming, Dr Armstrong, that the Marine Department is correct, in other words that you should, even with a watertight door, disregard the bulkhead at frame 1/2, may I suggest that then this table should be revised so that under "1998", under the line "With watertight door", that the number 1.007 should be amended so that it would read the same as the next line, namely "Immersed by 0.115", and this is because with or without the watertight door -- on my interpretation, that is -- the result should be the same? On that assumption, would you agree with that?
A. No, Mr Mok, I'm sorry, I would not agree because there's a difference here between what is required to be checked by regulation, which is of course an important requirement, and what I was doing here, which was talking about the practical vessel. It is possible to flood the tank room alone if there is a watertight door there.
Q. Yes. I understand the exercise that you are doing. But

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what I am saying is if you do apply the rule of 0.1L as the Marine Department interprets it, then the result would be the same as the next line.
A. It would be, but it wouldn't change what I've written here, which is what happens if the tank room alone is flooded.
Q. I understand. And would your answer be the same in relation to the 1.046 under "With watertight door" in 2005? Your answer would be the same, I suppose?
A. It would, yes.
Q. Thank you.
I'm going to move on to your next report, but before I do that, there is a point which is relevant also from page 929 of this bundle. Can I ask you to have a quick look at that.
A. Yes.
Q. It's the table headed "Engine room and tank room flooded"; do you see that?
A. Yes.
Q. I think you say the last line that is under "2005", "No watertight door", "Vessel sinks", I think your view is that line approximates the situation which obtained at the time of the incident on 1 October 2012.
A. Yes, correct.
Q. Right. Under that condition, with the raised ballast,

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the vessel would sink?
A. Correct.
Q. If you look at the second line of this table, under "1996", with "No watertight door", under that condition the vessel would also sink; correct?
A. Correct. With no watertight door, yes.
Q. So would it be correct to say that with or without the ballast, or with or without the ballast being raised, under the condition of the engine room and tank room flooded with no watertight door, the vessel would sink all the same?
A. Yes, it would. There is no buoyancy in the after part of the vessel at all in any of those conditions.
Q. Right. So with that in mind, can I invite you to look at your part 2 report, please, at page 1644. Under paragraph A-18, what you have stated there is:
"One of the major contributing factors in the loss of Lamma IV was the increase in the weight of the vessel (lightship) by over 30% some years after the watertight subdivision had been calculated (by the addition of ballast and fendering and other items), resulting in a substantial decrease in freeboard to the margin line and which was not recognised."
Are you saying there, Dr Armstrong, that it would make a difference to the loss of Lamma IV whether or not

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there were or were not the ballasts being added?
A. Could you repeat the question, please?
Q. Yes. The question is so far as the loss of Lamma IV is concerned -- because you used the words "major contributing factors". You're talking about the ballast?
A. Yes.
Q. So my understanding is that you seem to be saying that with the ballast --
THE CHAIRMAN: It's ballast and other items, is it not?
MR MOK: Yes, ballast and other items.
THE CHAIRMAN: Because it's about 15 tonnes, and ballast is only 8.25.
MR MOK: Correct. It's an addition of weight. Perhaps I can use the term "addition of weight over the years".
A. Yes.
Q. That was a major contributing factor in the sense without that additional weight, perhaps Lamma IV would not have been lost. Is that the implication?
A. The implication is more that the calculations were not redone and, more importantly, not redone correctly, because the fact there was no watertight door there was not recognised. So if this addition had been noted and the calculations redone, somebody would have noticed that the margin line was immersed and furthermore,

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without the door, it sank.
Q. So this is how we should understand this paragraph, right? In other words, we should not understand it in the sense that without the addition of weight, the ship would not have been lost? That's not the way we should understand this paragraph?
A. Correct, yes.
Q. Right. Thank you.
Going to the next issue. These are minor issues. Going back to page 1643, please. In the top paragraph on that page, I think you made this suggestion:
"The drawing approval and the survey should ideally be done by the same persons ..."
A. I did, yes.
Q. I think one possible consideration, and I'm putting this forward for your consideration, is that one advantage of having different people or different sets of people dealing with the same vessel is to reduce the opportunities for corruption or, you know, under-the-table dealings between particular officers and the builder. So one of the considerations may be that if you spread the handling of a particular vessel among different groups of people or different persons, it may reduce that opportunity. Do you agree that to be one of the valid considerations?

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A. It's a little outside my experience, Mr Mok, but I understand and perhaps could agree with what you're saying, yes.
Q. Yes. So would a viable alternative to insisting on the same group of people dealing with both the approval and the inspection be to just shape up the paperwork process so that there would be no missing records of key matters being dealt with during the approval and survey of this ship?
A. I would have to agree that multiple people could be used if the communication between them was seen to be very good.
Q. Right. Thank you. The next matter I would like your input on, which is really to explore with you, is on page 1651. I think in this whole section, from A-43 onwards, you are dealing with basically the drafting of annex F of the code of practice.
A. Yes.
Q. One of the points you made is that there is no clear reference to watertight subdivisions or floodable length calculation.
A. None that I could find, no.
Q. Yes. But you do note in paragraph A-45 that there is a requirement for the submission of estimated damage stability information at an early stage?

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A. Yes.
Q. And that would include, I think, from the code of practice, a calculation of the margin line. Would you like to have a look at that?
A. I don't think that's necessary. I believe that's the case, yes.
Q. Yes. Would that help to give sufficient information so far as the permissible subdivision or proper subdivisions are concerned, with this particular calculation?
A. There is a difference, Mr Mok, that damage stability is largely about the vessel heeling to one side. Yes, the margin line is a criteria with damage stability, but with the vessel heeled over, that's the margin line being immersed at the side of the ship, with the vessel heeled.
In the regulation, it defines damage stability as being with the vessel upright. Level trim. And margin line immersion in that case is usually at the bow or at the stern, rather than at the side of the ship. Or it can be, in severe cases, at the middle of the ship, if there is a lot of what we call shear. In other words, the boat looks like a banana, so the middle of the deck is lower than anywhere else. But the vessel is upright and not heeled to one side, so they are similar criteria

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but they are different.
Q. If I may summarise what you are saying. What you are saying is that the calculation of the margin line will give you the information concerning the stability of the vessel when it is either tilted at the bow or at the stern?
A. I wouldn't have used the word "stability" because it's got nothing to do with coming back upright.
Q. Right.
A. It's a question of whether it's going to submerge the margin line, sink the ship.
Q. Yes.
A. It has nothing to do with stability, which is the energy available to bring the vessel back again.
Q. Right. Without using "stability", but it does give you the information of whether or not the margin line would be submerged in the sense of making the vessel either tilt forward or backward?
A. Yes, they both relate to the same margin line, just in different locations.
Q. Would that information then assist the builder and the Marine Department in determining whether or not the watertight subdivisions were correctly being proposed?
A. I don't believe so, Mr Mok. I tried to make the point a little later on that you can have very good damage

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stability, and I believe Lamma IV did have adequate damage stability, even though it was sinking.
So the fact that you can have very good damage stability by lots of ballast -- as we saw on Lamma IV, more ballast was added, the damage stability improved, but unfortunately the watertight subdivision capability decreased. So the fact that one can increase when the other decreases suggests to me that the two are not that clearly related. You can't make conclusions about one from the behaviour of the other.
Q. So other than the calculation of the margin line and whether or not it is submerged in a particular way, what other information or calculation should be done at the early stage before the ship is built?
A. One of the first things a naval architect would want to do is to decide on his length, breadth, depth, the principal size of the vessel, and then to think about where to put the bulkheads, which is strictly a watertight subdivision and immersing the margin line. Because out of that will come information which will allow the designer to maybe change the beam of the boat, make it wider, or to increase the depth, and most specifically the depth, because the depth gives you what's called the freeboard, which is the distance from the deck down to the water, which is of course directly

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related to the distance from the margin line down to the water.

Once he has that information together, then he would go on to further design the ship to then give him some information on the heights of the weight of the ship, which would then allow him to look at the stability. Because an important factor here is that the location of the weight of the ship -- that is, the centre of gravity -- vertically and longitudinally does not affect watertight subdivision. But it is a vital and important input into the intact and the damage stability.

Q. So what you're saying is that if annex F is to be redrafted in any way, you would like to drafter to take into consideration these remarks that you have made here, and also that you have just made now?

A. Based on the unfortunate experience on Lamma IV, I think it's essential that it's done.

Q. Yes. Thank you. One short question about the seats. You have dealt with the seats on page 1653. You say in paragraph A-57:

"Seats were poorly attached to the deck of composite sandwich construction on Lamma IV, and became loose over time."

Then you have some suggestion there as to how this could be improved.

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A. Yes.

Q. One question I have is this. Do local vessels in other jurisdictions, maybe such as the UK or Australia, permit portable seats to be used in local vessels?

A. I don't know, Mr Mok. I know in Australia that that is not permitted, and there is a requirement for all seats to be rigidly attached.

Q. Right.

A. But a portable seat can be rigidly attached, which is the reason I'm looking a little unsure. Portable seats, in my understanding, are seats that can be moved but they still have to be rigidly attached to the deck.

Q. That's actually the question I was going to ask you. If there were going to be portable seats, how would those seats be securely attached?

A. I have seen seats with a chain from the middle of the seat down to the deck with a turnbuckle. But I don't know if that is acceptable or not.

Q. You have not gone into that particular matter?

A. No.

Q. One final matter. You remember in relation to the aft peak bulkhead, you had some observation that its distance should be about or less than 0.1L from the stern, or from the rudder stock?

A. Yes, sir.

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Q. But I have noticed that you have made no recommendation in this regard in your part 2 report. Should there be some recommendation in this regard, if it is so important?

A. I think that's an astute observation, Mr Mok. Yes, perhaps there should be some clarification.

Q. What should that recommendation be, if there be a recommendation?

A. I would need to consider that a little further. I would not be wanting to state numbers.

Q. Right.

A. I think it should be clear that the aft peak bulkhead is in the after part of the vessel, with a volume behind it of moderate capacity or minimum capacity or something like that.

Q. So in some general terms?

A. In some general terms.

Q. But you would not, for example, stipulate a distance or location comparable to that which is required for the collision bulkhead?

A. No, sir, I would not.

Q. So you would not use, for example, the 0.1L as being the guideline for this purpose?

A. No, I would not suggest a particular figure. The collision bulkhead location is quite specific, between

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5 and 7.5, or whatever classification society or SOLAS you are looking at. But close to those figures.

Q. Right.

A. And that has come from very many years of experience where vessels have been in collisions, and it's been found to be an ideal location for the collision bulkhead. So there is solid evidence behind that location, but I think less so in the terms of aft peak, mainly because there are so many different aft peak designs.

Q. Right.

A. Ocean-going ships tend to come to a narrow point at the after end, whereas Lamma IV was a very wide transom.

Q. And very many different types of vessels?

A. Indeed. Many different types of propulsion too.

Q. Indeed. So in short, would it be fair to say if indeed there should be some guideline as to the location of the aft peak bulkhead, there should be sufficient flexibility to be given to the authority --

A. Always very important in any legislation, yes.

Q. Yes. In particular in this respect.

A. I think it's in SOLAS, it does actually say "unusual arrangements shall be especially considered".

Q. I'm talking about more specific guidelines as to the location.

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A. It says that about the aft peak bulkhead in SOLAS, I think.
MR MOK: Right. Thank you very much, Dr Armstrong.
A. Thank you.
MR MOK: Those are my questions.
THE CHAIRMAN: Thank you, Mr Mok.
Mr Beresford?
Further examination by MR BERESFORD
MR BERESFORD: Dr Armstrong, you were referred to legislation bundle 2, tab 11, Cap 369AM and in particular to regulation 7(4) and 7(5) on page 8.
A. Yes.
Q. I believe you've prepared a diagram to illustrate paragraph (5) in particular.
A. I did, yes.
Q. This has been paginated at page 1742-30.
You were shown some other standards relating to ocean-going ships yesterday.
A. I was, yes.
Q. In particular the DNV and the German classification societies. Do they derive from SOLAS?
A. They are, I believe, very similar to SOLAS and no doubt derive in some way, with some modifications perhaps, to SOLAS, yes.
Q. What about this section here?

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A. This particular drawing was --
Q. No, I'm just talking about our legislation.
A. Oh, this section of the rules? This is word for word, I believe, in line with SOLAS.
Q. This derives from SOLAS?
A. Yes.
Q. Right. Your diagram. Could you just walk us through that, please. I think it primarily relates, does not, to subsection (5) of regulation 7?
A. It does, yes. The diagram is meant to represent the great majority of ocean-going ships that are operating at the present time and around which the SOLAS regulations are focused. This is a section through the vessel with the deck at the top. The main engine should be obvious on the right. It's driving a shaft running to the left of the diagram, with a propeller. And behind that, a rudder.
In this particular case, there is an aft peak bulkhead which is stepped but may not be necessarily stepped. It is marked as "aft peak bulkhead".
Q. So the dotted line indicates where it would go if it were not stepped; is that right?
A. Correct. I might come back to that, Mr Beresford.
The stern tube, which is referred to in paragraph (5) -- let me first of all talk about the stern gland.

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The stern gland is marked in the aft peak bulkhead. It's the main watertight mechanism to stop water leaking around the shaft. The regulation says it shall be "situated in a watertight shaft tunnel", and you can see that in the diagram. It's marked "watertight shaft tunnel". This is a watertight space. As the regulation says, it should be of such volume that if the tunnel or space is flooded, the margin line will not be submerged.
It's called a tunnel because if the engine is a long way forward in the vessel, that watertight shaft space can become very long and rather tunnel-like, but here it's just shown as a rectangular box.
The regulation states that the stern tube, which is the structural tube carrying the shafting and containing bearings for the shafting, is in a separate compartment which shall also be watertight, and you can see that's aft of the aft peak bulkhead, the shaft tunnel being forward of it.
The space behind the aft peak bulkhead is commonly called the aft peak tank because it is a rather useless space full of a lot of structure, so it is quite often used as a ballast tank.
Q. So in this drawing, is the aft peak tank the stern tube compartment?
A. It is.

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Could you just bear with me, Mr Beresford. Just reading the regulation.
The final part says:
"The stern tube shall be enclosed in a watertight compartment, the volume of which shall be the smallest compatible with the proper design of the ship."
If I can go back to the diagram. The aft peak tank, which contains the stern tube, is then under this regulation required to have a volume which is the smallest compatible with the proper design of the ship.
It can be a very difficult space. It's full of structure and really has little use, as I said, other than to provide a watertight boundary.
Just going back to the aft peak bulkhead, it could of course go straight up, but that would make a rather large steering gear compartment or a rather useless space. Sometimes on ships the space between the steering gear compartment and the aft peak bulkhead, if it did go straight up, is used for a freshwater tank. But here I've just shown it being stepped and part of the engine room.
This arrangement is very different to what we had on Lamma IV where the shafting went through the after end of the engine room and down below through the bottom of the vessel. But it did have a stern tube and a stern

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gland, and that would fall under the provision of -- in different designs, of course, the authorities have the capability to accept a different arrangement.

If I might refer to the three pieces of information put forward yesterday. Page 5089 -- I think it was marine bundle 13, Mr Beresford?

Q. Yes. Page 5089 is the DNV structural arrangement section.

A. It was, for oil tankers with a length of 150 metres and above.

Q. Yes. That appears from page 5088.

A. Yes. Paragraph 2.3.1.1 requires:

"An aft peak bulkhead, enclosing the stern tube and rudder trunk in a watertight compartment ..."

And my diagram shows that.

It then goes on to say:

"Where the shafting arrangements make enclosure of the stern tube in a watertight compartment impractical" -- which would be a situation similar to Lamma IV, for example, not that Lamma IV was an oil tanker -- "alternative arrangements will be specially considered."

If I might then refer to page 5091, which is the Germanischer Lloyd regulation for inland navigation vessels. In paragraph 6.2, it states:

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"The after peak bulkhead is to enclose the stern tube and the rudder trunk in a watertight compartment."

That was the case in my diagram. It then also permits other measures to be taken, such as may be necessary with a twin-screw craft.

Q. Can we go back to the Germanischer Lloyd.

A. If I might finally refer to the third documentation that was submitted yesterday, on page 5095, it defines on after peak" and "after peak bulkhead", and I'm obliged to Mr Mok for providing this. It says:

"After peak.

A compartment just forward of the stern post."

I will explain "stern post" shortly.

"It is generally almost entirely below the load waterline."

"Just forward of the stern post"; if we can go back to my diagram, please. The stern post, although not shown here, is that piece of structure that is S-shaped. It's a reverse "S" in this diagram, at the after end of aft peak tank, shown just forward of the propeller.

It runs from the bottom end of the aft peak bulkhead and then up in a curve -- correct -- and then keeps going, and around. That usually referred to as the stern post. It is usually a cast piece of structure which I have not shown there.

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If I might go back to page 5095.

"After peak bulkhead.

A term applied to the first transverse bulkhead forward of the stern post. This bulkhead forms the forward boundary of the after peak tank and should be made watertight."

You'll note above it says the aft peak is the compartment just forward of the stern post. The term "just forward" suggests to me that the after peak bulkhead should be considered as just forward of the stern post.

Q. Can we just pause for a moment, please, and look at a plan of the Lamma IV.

Tell me if you wish to refer to a different one, Dr Armstrong, but perhaps the General Arrangement would be the simplest for this purpose.

A. Ideal, yes.

Q. If we look at the profile, where is the stern post on Lamma IV?

A. It does not have a stern post.

Q. It doesn't have a stern post?

A. No. The vessel has a transom.

Q. Going back to the definitions we were just looking at at page 5095, it says:

"After peak bulkhead.

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A term applied to the first transverse bulkhead forward of the stern post. This bulkhead forms the forward boundary of the after peak tank and should be made watertight."

So where would you place that on Lamma IV, if there is no stern post?

A. I think where it is located at the present time is an excellent location, Mr Beresford.

Q. And that's frame 1/2, is it?

A. At frame 1/2. It provides just sufficient space for the steering gear mechanism.

Q. The reason I ask is because the origin of this issue was Mr Wong Chi-kin's evidence on Day 17, page 11, line 3, where he said:

"... I understand, the engine room after bulkhead can be considered as the peak bulkhead."

A. Yes, I recall that.

Q. Is that consistent with the definition we've just looked add?

A. No, sir, I do not agree that that can be considered the aft peak bulkhead.

Q. Just going back to the General Arrangement plan and in particular the profile. We can see the propeller tube going through the hull in the engine room; is that right?

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A. Correct.
Q. So I'm not sure if there's any suggestion that the bulkhead at frame 9 could be an after peak bulkhead?
A. Presumably not.
Q. You wouldn't agree that it could?
A. No, I would not.
Q. Did you have anything more you wanted to say about the drawing provided?
A. No. Thank you very much.
Q. No. Thank you, Dr Armstrong.
So just in relation to the aft peak bulkhead, it seems to me that we have to consider it in three periods of time. There's the time that pertained in 1995, and the definitions in the Blue Book, possibly the 1995 Instructions; the present time, under the code of practice, 2006; and the future, as my learned friend Mr Mok just asked you.
In relation to the time pertaining when Lamma IV was built, in 1995, Mr Wong Chi-kin said in his evidence that he had actually regarded the aft peak bulkhead as being the one at frame 1/2. But then he also, as we've just seen, said that the engine room after bulkhead could be considered as the peak bulkhead, although that appears to have been an ex-post rationalisation. They're inconsistent. Which, in your view, is correct?

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A. The frame 1/2 is the only consideration I would have of the aft peak bulkhead.
Q. Yes. Then the present situation under the code of practice, that seems to be clear, that the aft peak bulkhead is required to be watertight and would be positioned at frame 1/2; is that right?
A. I believe so, yes.
Q. My learned friend asked you what your recommendation would be for the future, and of course I appreciate that you would want to consider that, not having included that in your report. But is it fair to say that there are two considerations, at least. One of the considerations derives from the 0.1L and watertight subdivision, in other words the risk of collision and the possibility of a hole on the bulkhead that may affect two compartments, but the other is simply to have some buoyancy at one end of the boat, isn't it?
A. Yes. Which is covered by the requirement to have an aft peak bulkhead.
Q. Was that the rationale in 1995?
A. I believe it was.
Q. And is that the rationale in 2006?
A. I believe it was.
Q. And is that a valid rationale for the future?
A. I believe so. As well as some protection from flooding from leakage.
Q. Hence the rules and regulations relating to the rudder stock and the stern gland?
A. Correct.
Q. My learned friend also asked you in relation to the watertight bulkhead and the 0.1L rule whether the question of whether or not the transom was a bulkhead was a matter of interpretation. He did not identify any other alternatives, and in particular whether it was a matter of practice. As you put it in your report, as one skilled in the art of naval architecture, what is the practice of naval architects, as far as you are aware? Is the transom regarded as a main transverse bulkhead?
A. I cannot speak for other naval architects, unfortunately, because I do not know the answer to that. But in my experience, from all I have done -- in the last few years most of what I have been doing, Mr Beresford, is catamarans. So they tend to be greater than 0.1L. But the monohulls that I have done, and some of the patrol boats, also fell outside the 0.1L so would not have created a problem.
Q. I'm not asking about 0.1L; I'm asking about the question of whether a transom can be a bulkhead.
A. Oh. Transom cannot be a bulkhead, no, sir.

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Q. Can you answer that as a matter of practice, or is that just your interpretation of the rule? What is the general practice of naval architects?
A. A transom is not a bulkhead. It's like trying to say a deck is a bulkhead. They serve a similar purpose, to keep the water out, but they're not the same at all.
Q. If hypothetically the tank room or a void space was less than 0.1L -- can you just suppose the hypothesis for a moment?
A. Yes.
Q. Which bulkhead should be regarded as forming part of the subdivision of the ship, for the purpose of paragraph 6(6)?
A. Yes, it's an interesting question. It says "one of the bulkheads shall be ignored". I'm not sure whether that is up to the discretion of the designer. I believe it is, but I'm not 100 per cent certain. It's not an uncommon occurrence, because many vessels have what are calls cofferdams. If, for example, you have an engine room and you want to put the passenger space next to it, it's normally not allowed for fire reasons. So you would make a void space between them, which is called a cofferdam. So there is a void there, and thereby you're not conflicting with the regulations that say an engine shall not be next to a passenger space.

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And there are other examples such as fuel tanks next to engine rooms, which is quite common.

In that case, of course, the cofferdam, which is surrounded by watertight bulkheads, perhaps only 1 or 2 metres apart, would conflict with the 0.1L. In that case, I believe the designer would choose one of those as being what is called a non-conforming watertight bulkhead.

Q. Would that choice be made for all purposes?

A. It would be made for all purposes and it would be marked as "non-conforming watertight bulkhead" on the plans, including on the GA.

Q. Thank you. Now, my learned friend asked you some questions about floodable length. In particular, he asked you if the stability calculations would enable you to see if the margin line would be submerged by making the vessel tilt forward or backward.

A. Yes.

Q. My understanding of your evidence is that the stability calculations were concerned with transverse stability, not fore and aft stability?

A. Correct.

Q. So which is correct?

A. I'm unsure of your two options, I'm sorry. The first one was about longitudinal stability, but I argued it

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was not about longitudinal stability because there was no righting moment trying to bring the vessel back upright.

Q. So this question of tilting forward or backward doesn't really arise, does it, in relation to the stability calculations?

A. Correct.

Q. Then finally, my learned friend referred you to the question of portable seats. There was some question as to whether a portable seat might be attached or not. There was an exhibit, WCK-4, to Mr Wong Chi-kin's statement, which is in marine bundle 11 and begins at page 3912.

This is something from the Department for Transport. In fact, to give it its accurate description, it is "Department for Transport, Instructions for the Guidance of Surveyors, MSIS 4 chapter 12 ".

If we can turn to page 3915, paragraph 12.2.6.1, we see there reference to:

"Seating either fixed or portable having attachment either to the deck or a bulkhead ..."

A. Yes.

Q. So does that conform to your understanding that reference to a portable seat does not imply that it's not attached?

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A. Correct. Sorry, did you say "not attached"?

Q. The fact that is seat is described as "portable" does not imply that it is not attached?

A. Correct, yes. Thank you.

MR BERESFORD: Thank you very much, Dr Armstrong. I have no further questions.

A. Thank you.

THE CHAIRMAN: Thank you, Dr Armstrong, for assisting us in so many different areas. Your evidence is now complete, and may we wish you a safe return journey. Thank you for all your help.

A. Thank you very much, sir. Thank you.

(The witness withdrew)

THE CHAIRMAN: Yes, Mr Beresford.

MR BERESFORD: Mr Chairman, I believe now it just remains for some miscellaneous matters to be tidied up. In particular there's Mr Lee Kwok-keung's statement.

THE CHAIRMAN: We don't regard him as miscellaneous, Mr Beresford.

MR BERESFORD: I don't wish to diminish the importance of Mr Lee in any way.

THE CHAIRMAN: No. We regard his evidence as of some significance.

MR BERESFORD: Perhaps the best way to deal with it would be to call him, for me to read his statement, and then if

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anybody has any questions, they can be put.

THE CHAIRMAN: Yes, I think that's the way to proceed.

MR BERESFORD: In that case, I call Mr Lee Kwok-keung.

MR LEE KWOK-KEUNG (sworn)

Examination by MR BERESFORD

MR BERESFORD: Good morning, Mr Lee. Thank you very much for coming this morning to assist the Commission in its Inquiry.

Mr Lee, you've made a statement dated 6 March 2013, which may be found in our miscellaneous bundle at page 185. Do you have a copy of that statement in front of you?

A. Yes, I have.

Q. Do you recognise your name and signature at page 191?

A. Yes.

Q. Have you had an opportunity to remind yourself of the content of this statement today?

A. Yes.

Q. Is there any amendment or addition you would like to make?

A. No.

Q. So are the contents of this statement true?

A. Yes.

Q. Thank you. The exhibit you refer to is at page 193, marked appendix 1.

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A. Yes.
Q. Mr Lee, I'm going to read through your statement. If there's anything that you hear that is inaccurate or incorrect, or that you'd like to modify, please stop me and let me know.
A. Yes.
Q. "I am the chairman of Hong Kong & Kowloon Trades Union Council, and I am duly authorised by HKKTUC to make this statement on its behalf to provide our views and observations to the Commission of Commission of Inquiry into the Collision of Vessels near Lamma Island on 1 October 2012.
A. Hours of work of seafarers.
2. The working hours of sea crew in Hong Kong waters and river trade vessels is different, as different legislations apply to seafarers of different vessels: According to section 4 of Employment Ordinance (Cap 57), Employment Ordinance is applicable to seafarers of Hong Kong waters vessels. New World First Ferry Services Ltd, the Star Ferry Company Ltd and the Hong Kong & Kowloon Ferry Holdings Ltd all apply the Employment Ordinance, whereas Shun Tak-China Travel Macau Ferries Ltd applies the Merchant Shipping (Seafarers) Ordinance (Cap 478).
3. In the present case, Sea Smooth's seafarers have

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to work on a 24-hour shift."
You've given us a reference there to paragraph 6 of Lai Sai-ming's statement and his evidence, and paragraph 9 of Lo Pui-kay's statement and his evidence.
"For the sake of comparison, I set out below the work hours of other ferry companies in Hong Kong:
(a) Seafarers of First Ferry also work on a 24-hour shift.
(b) The coxswain, assistant coxswain and engineer of Star Ferry work 8 hours per day, whilst deckhand works 11 to 14 hours per day. Star Ferry provides 1-hour meal break to sea crew.
(c) Shun Tak-China Travel's seafarers work a maximum of 11 hours per day, with minimum 11 hours of rest between two working days, and have 45 minutes' meal break.
4. The Merchant Shipping (Seafarers) (Hours of Work) Regulation (Cap 478D), the subsidiary regulation of the Merchant Shipping (Seafarers) Ordinance (Cap 478), stipulates that, subject to section 6 of the same Regulation, seafarers employed on a ship as officer in charge of a watch or as a rating forming part of a watch shall be provided a minimum of 10 hours of rest in any 24-hour period. This is in line with the International Convention on Standards of Training, Certification and

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Watchkeeping of Seafarers 95 ('STCW Convention 95'). Hong Kong is one of the 133 countries or areas that have given full and complete effect to the provisions of the STCW Convention 95.
5. By working on a 24-hour shift, the working hours of sea crew of vessels of HKKF and First Ferry might not have breached the Employment Ordinance, but such working hours might have breached section 4 of the Merchant Shipping (Seafarers)(Hours of Work) Regulation (Cap 478D), had such regulation been applicable to them."
Just pausing there, Mr Lee. On the question of application, I should perhaps read out section 3 of Cap 478, which says --
THE CHAIRMAN: Do we have that legislation?
MR BERESFORD: It's not in our bundle, though I understand we might be about to receive copies. Cap 478, section 3.
THE CHAIRMAN: I think we can find it on an internet site and put it up so that it can be followed.
MR BERESFORD: Now we have section 3 on the screen. This provides:
"This Ordinance shall not apply to --
(a) any ship of war ...
(b) any vessel required to be certificated under the

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Merchant Shipping (Local Vessels) Ordinance (Cap 548) except [certain immaterial exceptions]."
So essentially the scheme, Mr Lee, is that Cap 478 applies to vessels that go outside of Hong Kong waters, but local vessels are governed by the Employment Ordinance; is that right?
A. Yes. As I see, I understand this way also. I share the same view.
Q. Then if we can quickly look at Cap 478D, the Merchant Shipping (Seafarers)(Hours of Work) Regulation, section 4(1) provides:
"Subject to section 6, a seafarer employed on a ship as officer in charge of a watch or as a rating forming part of a watch shall be provided a minimum of 10 hours of rest in any 24-hour period."
Section 6 provides for certain exemptions:
"Notwithstanding section 4, a seafarer may participate in a navigational, engine room or machinery watch although he has not had the rest periods specified in section 4(1) in the following circumstances and during the 24 hours immediately thereafter --
(a) when the ship is engaged in an emergency operation or emergency drill, including rescue, salvage, towage, wreck location, buoyage operations, oil pollution, fire-fighting or public health duties; and

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(b) during the existence of an emergency threatening the safety of the ship or the life of any person."

So those are the regulations applicable to seafarers who go to Macau and mainland China, but they don't apply to local vessels under the Employment Ordinance?

A. Yes.

Q. Then you go on to say:

"Mr Ng Siu-yuen of HKKF mentioned that HKKF offered Sunday off, but their counterparts in the trade do not. Hence, HKKF had to 'buy leave' from sea crew (ie they had two days less of holidays per month) to alleviate the problem of staff shortage. Though no evidence was given that HKKF signed contract with the crew of Sea Smooth to 'buy leave' from them, the Commission is reminded that, according to section 70 of the Employment Ordinance, any term of an employment contract which extinguishes or reduces any right, benefit or protection conferred upon the employee by the Employment Ordinance shall be void. Employees do not welcome the buying of leave or rest days, because it deprives the employees' rest period, and reduces their family time."

THE CHAIRMAN: Dealing with that issue, Mr Lee. As I understood the evidence from Hong Kong & Kowloon Ferry, the employees involved were free to choose whether or not to accept this offer to work an extra day

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or not. So it was entirely up to them.

A. Yes, Mr Chairman. Of course I think this Ordinance, the Employment Ordinance, this certain section is dealing in terms of is it on a voluntary basis or not? Of course both parties have entered into an agreement before employment. But it seems that there is some possibility that the employee may be not willing to be taking away two rest days.

THE CHAIRMAN: Yes. Then he says "no", doesn't he, "I won't work on Sunday"?

A. Yes, Mr Chairman. I think the point is that we have to see the employment contract. Because I myself have not seen the contract. So it's I think based on the contract, whether this is -- the employee has the choice to choose not to be forced by working on only two rest days per month. If he can --

THE CHAIRMAN: I don't think it's been suggested in the evidence that the employee must comply with the request. That's why he's paid money to work.

I think the tenor of the evidence is, he's asked to do it and if he's willing to do it, then he gives up his leave day and he gets paid for it. So it's a voluntary matter. That's as I understand the evidence.

A. Yes, Mr Chairman, but there may be some possibility that the employee may like to choose in certain months, then

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he wishes to take the four whole rest days, but then he or she may be forced to work. If he refuses to work on the rest days, then he will face lay-off or something.

THE CHAIRMAN: We have no evidence about that.

A. Yes. Yes, I agree, but that is based on the contract of them, between them, whether -- he has the choice whether he'd like to take the four rest days or not.

THE CHAIRMAN: We have your point. Thank you.

A. Thank you.

THE CHAIRMAN: Yes, Mr Beresford.

MR BERESFORD: Mr Lee, you then turn to deal with the issue of "Number of sea crew on board vessels". You say:

"7. In the present case, the number of crew members on board Sea Smooth on 1 October 2012 was 4, viz 1 coxswain, 1 engineer and 2 deckhands. According to my research, other ferry companies have more crew on board vessels.

(a) Star Ferry: Has 6 to 7 crew members on board its vessels, with 6 crew members (1 coxswain, 1 assistant coxswain, 1 engineer and 2 to 3 deckhands) on upper deck and 1 deckhand on lower deck.

(b) First Ferry: Has 4 to 8 crew members on board its vessels, including coxswain, assistant coxswain, engineer, assistant engineer and deckhand.

(c) Both Star Ferry and First Ferry maintain

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1 coxswain and 1 assistant coxswain in the wheelhouse of their vessels, with the assistant coxswain performing the duty of look-out."

THE CHAIRMAN: As far as First Ferry is concerned, Mr Lee, do you know whether there is any logic to a variation in the crew numbers from four to double, at eight?

A. Yes, I have asked the operational manager of First Ferry, and he told me that they will act according to the minimum requirement stipulated by the Marine Department. Some smaller ferries, they may require smaller manning.

THE CHAIRMAN: Thank you.

A. Yes.

MR BERESFORD: So in the case of all these numbers, are they basically what is required by the Marine Department?

A. Sorry?

Q. In the case of all of these numbers that you have given, are they simply what is required by the Marine Department as the minimum manning?

A. Yes. I was told by the operators that, yes, they are all worked out according to the -- in line with the requirement of Mardep.

Q. Yes.

You then turn to the issue of "Fatigue":

"8. When asked whether there had been any complaint

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about coxswains being overworked and not having enough rest time, Mr Ng Siu-yuen of HKKF admitted that the coxswains of HKKF expressed to him that 'if they had more resting time in between (duties), then it will be better'. It means that the coxswains want more rest.

9. Professor Andy Smith, Centre for Occupational and Health Psychologist, Cardiff University ... wrote a report titled 'Adequate Crewing and Seafarers' Fatigue: ...' commissioned by the International Transport Workers' Federation ('ITF') ..."

This you've exhibited at appendix 1. It's quite a long report so obviously I'm not going to read the whole thing, but you've given us a quote. You say:

"Below is an extract from paragraph 5.1.1 of the said report, where Professor Andy Smith made reference to a report by ITF named 'ITF Seafarer Fatigue: Wake up to the dangers (1997)':

'this report, based on responses from 2,500 seafarers of 60 nationalities, serving under 63 flags, demonstrates the extent of excessive hours and fatigue within the industry. Almost two-thirds of the respondents stated that their working hours were more than 60 hours per week and 25% reporting working more than 80 hours a week (42% of master). It was clear, therefore, that on many ships working hours were in

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excess of the STCW 95 of ILO 180 (International Labour Convention No. 180) requirements. In addition, 36% of the sample were unable to regularly obtain 10 hours rest in every 24, and 18% regularly unable to obtain a minimum of 6 hours uninterrupted rest. Long periods of continuous watch-keeping were also reported, with 17% stating that their watch regularly exceeded 12 hours. Over half the sample (55%) considered that their working hours presented a danger to their personal health and safety. Indeed, nearly half the sample felt that their working hours presented a danger to safe operations on their vessel. Once again this was particularly prevalent in watch-keepers and also on ferries and offshore support vessels.'"

Was there anything else in this exhibit that you wanted to draw our attention to, Mr Lee?

A. No, not particularly.

Q. No. Okay. Thank you.

You then go on to compare the situation with workers in the road traffic industry. You say:

"10. The working hours of drivers of buses of Kowloon Motor Bus Co (1933) Ltd ('KMB') do not exceed 14 hours per day, and their driving hours do not exceed 11 hours per day. KMB drivers have no less than minimum of 10 hours of rest per day.

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11. The weekly working hours of drivers of Mass Transit Railway ('MTR') do not exceed 42 hours, and their daily working hours would not exceed 10 hours.

12. Both KMB and MTR have regular safety committee meetings with union representatives. For example, KMB held safety committee meetings with unions according to the location of the company plants.

13. Both KMB and MTR provide free yearly medical check-up for their drivers. KMB drivers must have medical check-up yearly when they are over 50 years of age, whereas MTR drivers over 45 years of age must have yearly medical check-up."

You then go on to address the issue of "Manpower Shortage and Training":

"14. There is a serious problem of manpower shortage in the local vessels industry. According to a recent survey conducted by companies of local vessels (including Star Ferry), there is a shortage of about 80 seafarers in the local vessels industry.

15. Manpower shortage in the local vessels industry could be attributed to the unattractive salary paid to local vessels seafarers and their long working hours. On average, the salary of a deckhand of local vessels is around HK$12,000 and they are required to work for about 312 hours per month (assuming that they work an average

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of 78 hours per week). Coxswain of local vessels earns a salary of around HK$15,000 on average.

16. Another reason for the manpower shortage in the local vessel industry has to do with the lack of training courses provided for seafarers of local vessels. Since 2007, there has been no new class for deckhand or new class for students who wish to further their career to become coxswain. The companies operating local vessels have repeatedly alerted Mardep in the last few years over the lack of provision of training courses.

17. The Government seems to pay more attention to providing training to seafarers of ocean-going vessels rather than seafarers of local vessels. In 2004, the Government established a 'seagoing training incentive scheme' with a funding of HK$9 million. Under this scheme, a cadet will receive HK$5,000 per month during the stipulated 'individual training period' which will qualify him/her to sit for the class III deck/engineer officer examination. The said financial incentive (HK$5,000 per month) will be paid in arrears directly to the successful applicants by Mardep in lump sum upon the cadet's completion of his/her employment contract up to the maximum training period of 24 months. In the year 2010, the Government injected HK$19.2 million more to

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the scheme so that the scheme could be extended to 2014. The total funding for the scheme comes up to HK$28.2 million, but the local vessels industry does not receive similar kind of financial assistance from the Government."

THE CHAIRMAN: Does the local vessel industry receive any financial assistance from the Government?

A. For the local vessels, I think not. I haven't heard they have received any assistance from the Government. But of course the courses held by the so-called Maritime Services Training Institute, they have already received some assistance, financial assistance from the Education Bureau. So, for example, if they have radar operation course for the local vessel seafarers, the students will have to pay one-third of the total school fee. So there is some kind of subsidy. But this kind of incentive scheme, local vessel seafarers, I think, does not apply to them.

THE CHAIRMAN: Yes. Thank you.

MR BERESFORD: I note the time, Mr Chairman. I don't know if you wish to take a break.

THE CHAIRMAN: Yes, I think perhaps we should.

Mr Lee, we're going to take our break. I know you've been present in the hearing for many days so you'll know we take a 20-minute break. We'll resume in

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20 minutes' time. Thank you.

(11.32 am)

(A short break)

(11.51 am)

THE CHAIRMAN: Yes, Mr Beresford.

MR BERESFORD: Thank you, Mr Chairman.

Mr Lee, we were just coming on to the next issue you address in your statement, headed "Marine Accidents in Hong Kong':

"18. According to the present regime of Mardep, all marine accidents will be reported to Mardep, and suitable cases are investigated by surveyors of its Marine Accident Investigation Section ('MAIS'). Mardep handles an average of about 400 accident cases annually, of which some 30 to 40 are 'serious' cases, and about 10 are 'very serious' cases which involve casualties.

19. On 19 September 2012, Mardep issued Notice No. 133 of 2012 to Mariners/Coxswains and Operators of Vessels regarding a collision which occurred between a high-speed passenger ferry and a motor launch when they were on convergent courses within the speed restriction zone 'A' in the Victoria Harbour (... file ref ...). according to the investigation by MAIS, several factors contributed to the accident, which included: (a) the masters of the vessels not maintaining a proper

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look-out, (b) the masters of the vessels did not comply with the Collision Regulations.

20. Besides the above incident, there are three further recent reports of investigation by MAIS involving high-speed craft:

(a) At 08:30 on 26 June 2011, a passenger high-speed craft New Ferry VI departed from Macau to Hong Kong-China Ferry Terminal. At 09:35, she collided with a triple-decker ferry Xin Guo near the Central Buoy. Investigation by MAIS revealed that the chief master of NF and assistant master of Xin Guo did not maintain a proper look-out and did not act in accordance with the Collision Regulations.

(b) On 13 February 2011, a high-speed craft operated by First Ferry New Ferry LXXXVI collided with a transportation boat Pilot 2. The master and coxswain of both vessels did not maintain a proper look-out and did not comply with the Collision Regulations.

(c) On 20 March 2009, a high-speed craft Cotai Strip Cotaigold and a local open sampan collided. Investigation by MAIS revealed that the master of Cotai Strip Cotaigold did not maintain a proper look-out.

21. It seems that there is a culture that the masters and coxswains of local vessels are not accustomed to maintain proper look-out on vessels.

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Mardep is aware of the main reasons which contributed to the said collision incidents. It is suggested that Mardep could consider making it a mandatory requirement for passenger vessels to maintain a designated look-out."

THE CHAIRMAN: Mr Lee, you will have heard of the recommendation that Dr Armstrong has made about the importance and need for the Marine Accident Investigation Section to be independent of the Marine Department. Is there anything you wish to say about that?

A. Yes. First of all, I agree to this recommendation because now in Mardep, their usual practice is they investigate the accidents and it is involving cases of, yearly, about 350 to 400 cases. And sometimes the reason of the collision is that of course it's the coxswain, they did not maintain a proper look-out, and also they are not operating in line with the safety regulations. But I think in this collision, in the Lamma IV and Sea Smooth case, there may be some other factors.

THE CHAIRMAN: It's simply the issue of whether or not the accident investigation section should be independent of the Marine Department that I'm inviting you to comment on, if you wish.

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A. Yes. Yes, I agree to that. Because then there is another neutral, independent body to investigate and then to put forward the case to the Government concerned, to see whether there would be some prosecution of some parties. I think that is more fair to all the parties involved.
THE CHAIRMAN: Have you been supplied with a copy of Mr Cheng Yeung-ming's statement, which has been provided to us today, which addresses the issue of the independence of the Marine Accident Investigation Section? Have you seen this before?
A. I'll take some time to read this.
THE CHAIRMAN: So the answer is you haven't seen it before?
A. No, I haven't.
THE CHAIRMAN: Well, it is something that the Commission will be receiving later, and you'll get this information at that stage.
A. Thank you.
THE CHAIRMAN: So we'll move on for the moment.
Yes, Mr Beresford?
MR BERESFORD: So in conclusion, Mr Lee, you raise a number of possible recommendations to address the problems you've identified in your statement. Firstly:
"When Mardep issues Marine Notices regarding maritime safety, Mardep officials should conduct

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inspections and spot-checks of vessels to ensure that they comply with the requirements stated in the Marine Notices. Mardep should also ensure that the contents of Marine Notices are properly and adequately communicated to the operators of local vessels in Hong Kong."
That really goes to the question of enforcement of Mardep's notices; is that right?
A. Sorry, could you repeat your question?
Q. That really goes to the question of enforcement of Mardep's notices? You're suggesting that Mardep should take more steps to enforce their notices?
A. Yes, it is desirable for Mardep to enforce -- after they issue notices to coxswains or operators, they take some follow-up measures.
Q. To follow-up, yes. Secondly, you suggest:
"The Government should step up its efforts in promoting maritime safety. The Government could liaise with local vessels companies and trade unions to help bring the message of maritime safety to the front-line staff and employees, and to the community as well.
(c) The Government could tailor-make part-time courses that could accommodate the working hours of coxswains and deckhands.
(d) The Government could encourage the younger generation to join the local vessels industry by

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offering subsidies or financial incentives to help the shortage and ageing problem of coxswains and engineers.
(e) According to the International Convention for the Safety of Life at Sea (SOLAS) 1974, a revised SOLAS Chapter V (Safety of Navigation) (2000 Amendments) requires automatic identification systems ('AIS'), capable of providing information about the ship to other ships and to coastal authorities automatically, to be fitted aboard all ships of 300 gross tonnage and upwards engaged on international voyages, cargo ships of 500 gross tonnage and upwards not engaged on international voyages and passenger ships irrespective of size built on or after 1 July 2002. The Government could consider requiring all local passenger vessels to be fitted with AIS.
(f) Life jackets must be readily accessible in public spaces of vessels, at the muster/assembly areas, on deck or in life boats, so that in the event of emergency passengers need not return to the cabin to get life jackets. The number of children life jackets on board vessels should be increased and should not be limited to 5% of the maximum carrying capacity of vessels."
THE CHAIRMAN: Thank you.
MR BERESFORD: Thank you, Mr Lee. Please wait there.

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Questions by THE COMMISSION
THE CHAIRMAN: Mr Lee, you've set out in paragraph 3 the fruits of your research into the working hours of other ferry companies in Hong Kong.
A. Yes.
THE CHAIRMAN: You've described how Star Ferry and Shun Tak provide meal breaks.
A. Yes.
THE CHAIRMAN: Are there provisions in the Employment Ordinance of which you are aware that require employers to permit their employees to have meal breaks during working days?
A. You mean the other employers of the other operators?
THE CHAIRMAN: Yes. Is there a provision in the Employment Ordinance that deals with or addresses the need to provide meal breaks for employees?
A. Yes. Yes, there are no provisions in the Employment Ordinance for meal breaks supplied by the employers. But these two companies, Star Ferry and Shun Tak, I think they adopt a more human treatment to the seafarers, and they provide these meal breaks for them. So you can see in the statement also, besides the maritime profession, in the road transport, both KMB and also the MTR provide meal breaks for the employees also.
THE CHAIRMAN: That's not a matter you've dealt with in

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paragraphs 10 through to 14, but you say that's the fact, that KMB provide specifically for meal breaks for their employees?
A. Yes. Yes.
THE CHAIRMAN: And the MTR?
A. MTR also. They provide the meal breaks, yes. But as far as I know, the MTR, there is no payment for meal breaks. They take the meal breaks on their own time.
THE CHAIRMAN: Yes.
Can I seek counsel's assistance. Mr Beresford, are you aware of any provisions in the Employment Ordinance, which is an ordinance with which I'm not familiar, as to the requirement in employers to provide meal breaks for employees?
MR BERESFORD: I must confess, Mr Chairman, it's a long time since I've looked at the Employment Ordinance. I don't recall any such provision, but I would have to check.
THE CHAIRMAN: Can any other counsel assist?
MR McGOWAN: I don't believe so. There was a debate about meal breaks when the minimum wage legislation was being discussed.
THE CHAIRMAN: Yes, I'm aware of that.
MS LOK: I do not recall any express provision in that regard, but I will also need to double-check.
THE CHAIRMAN: Yes. Well, this is a matter that in

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particular concerns Hong Kong & Kowloon Ferry. Is there anything that you have to say about that?
MR CHAN: No, Mr Chairman.
THE CHAIRMAN: You're not aware of any provision?
MR CHAN: As far as I'm aware -- we did double-check this point after receiving Mr Lee's statement, and as far as we can see, there is no provision in relation to mandatory meal breaks.
THE CHAIRMAN: Truly extraordinary, Mr Lee. But there we are.
A. Yes.
THE CHAIRMAN: Mr McGowan, do you have any application?
MR McGOWAN: I don't, sir. Thank you very much.
THE CHAIRMAN: Hong Kong & Kowloon Ferry?
MR CHAN: No, Mr Chairman.
THE CHAIRMAN: Thank you.
Ms Lok?
MS LOK: No application.
THE CHAIRMAN: Thank you.
Mr Lee, thank you very much for your assistance in gathering this information together for us, and no doubt reflecting your presence on so many days when we've been receiving evidence in the hearing. Thank you.
A. Thank you. But, Mr Chairman, before I go, can I make one more short recommendation?

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THE CHAIRMAN: Yes, please do.
A. Because I forgot. Thank you, Mr Chairman.
The Financial Secretary, he just delivered his budget proposal at the end of February and there is a proposal in section 85 that he proposed to designate the amount of $100 million for the training fund for the maritime and aviation training fund. In my statement, I also -- in the conclusion, I recommend that it is hopefully that more younger people will enrol in the training course and then, after their graduation, they will enter this profession, then there will be more and more younger people working in the maritime profession.
So the recommendation is that we ask the Government departments concerned to make this fund more accessible for the future younger people to apply for this fund, and then they will be willing to work in this profession. Because nowadays, school fees and examination fees may be a burden to them. So that is my recommendation.
THE CHAIRMAN: So what you're recommending is that some of this money be provided for training for seafarers, to provide a pool to be recruited into the local vessel operators?
A. Yes. Yes, Mr Chairman. Especially to the local vessels profession, because, you see, there is already an

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incentive scheme for the seagoing cadets, but not any programme for local vessel seafarers.
THE CHAIRMAN: Yes, and you're asking for more of a balance?
A. Yes, Mr Chairman. If I may say, the Chief Executive in his policy address mentioned that he is going to enhance the status of Hong Kong as a shipping centre. In my view, shipping centre is not only involving Hong Kong-registered ships of 50-million gross tonnage or 60-million gross tonne, or Hong Kong is one of the top 10 fleet owners or not. I think one of the most important factors is we have safety in our own waters. That also should be addressed in promoting Hong Kong as a shipping centre.
Thank you.
THE CHAIRMAN: Yes. Thank you very much, Mr Lee.
COMMISSIONER TANG: Mr Lee, in paragraph 15 of your statement you mentioned the remuneration for local vessels crew. Isn't that a factor to be considered too in attracting young people to join the profession, because of the conditions of service and the remuneration?
A. Yes. Thank you, Commissioner. As I understand, this is concerning the salary of the coxswains or the deckhands. But we know that the fares collected by the operators is limited. Because of these factors, we can't ask for

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higher salary as the coxswain or the master working in Shun Tak, because Shun Tak Company, they are operating river trade and they have received a more higher fare, then they can pay about two or three times higher than our local coxswains, compared with their masters.

But how we can attract younger people to work under these conditions is that we provide them with some better prospects. For example, helping them to study and to get the examination, and then they will, from the local vessels' coxswain, they can get the class III seamen -- I mean the seagoing class III certificate. Then they can choose to work in the river trade, or even if they are fit to do so, they can work on ocean-going vessels. Because we know that in the ocean-going vessel companies, they are very in need of capable engineers and officers and masters, and they are very well-paid.

But the fact is that younger people may be not aware, fully aware, of this situation and if they have some incentive scheme and promotion from the employers or trade union side, then we together we can help the younger people to work in this profession. And then we can solve this ageing problem.

Because when I contacted Star Ferry and New First Ferry, they said they are in need of about 80 people. They are in need of 80 people -- coxswains, deckhands,

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engineers. Always in need of -- a shortage of the manpower.

So we provide them with the courses and assistance, and then after a certain period, they gain the experience and sea-time experience, they can work in the river trade and then ocean-going, and then we will have enough manpower for the local and also the river trade.

THE CHAIRMAN: Thank you, Mr Lee.

A. Thank you.

(The witness withdrew)

THE CHAIRMAN: Yes, Mr Beresford.

MR BERESFORD: Mr Chairman, next I was proposing to read Mr Evans's statement, Mr Evans being a representative of the Government Flying Service.

THE CHAIRMAN: Thank you.

MR JAMES DAVID EVANS (statement read)

MR BERESFORD: Mr Evans gave a statement to the police on 1 November 2012 which is contained in our police bundle I at page 1355. We have it on the screen.

It can be seen there that he is ex-Royal Air Force. He holds the post of flight operation manager in the Government Flying Service and he provides information in relation to the deployment of the Government Flying Service in the vessels collision incident according to the Government Flying Service record.

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Paragraph 2:

"On 1 October 2012, I reported on duty at 06:00 hours and completed my work at 15:30 hours. At 21:39 hours on the same day, I was informed by the Air Command and Control Centre (ACCC), GFS that there had been a ferry collision off Lamma Island. I was briefed that an aircraft had been deployed. I immediately returned to my office and arrived at 21:46 hours in order to take charge of the deployment of GFS. I also informed superior Captain West Wu, the chief pilot (operations) who also returned to GFS.

After I arrived at the base, I was briefed on the situation by the operation officer in ACCC and aware of 3 unconscious casualties pending transfer for PYNEH by R62 (commanded by Captain Victor Lau). At about 21:50 hours, I was informed that the casualties had been picked up by R62 and would arrive at PYNEH in 5 minutes. At 21:57 hours, the marine HQs informed ACCC that no further assistance was required from GFS at this stage.

At 22:08 hours on 1 October 2012, a request was received from Marine Rescue Coordination Centre of Marine Department for providing night sun service for searching. ACCC was told that there were 6 fireboats, 6 Marine Department boats and 5 Marine Police boats on scene. At 22:12 hours, R31 (Captain G Dann) responded

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to the request and arrived on scene at 22:25 hours. At 22:42 hours, R31 found an empty life raft at north-west Lamma, which was reported to the on-scene commander. At 23:14 hours, R31 finished searching the eastern side of Lamma and the northern coastal line but with nothing found. They then provided night sun service to other rescuing units until 02:05 hours on 2 October 2012.

At 00:40 hours on 2 October 2012, the crews of R31 were replayed by a new crew with callsign R51 (Captain West Wu). Between 00:59 hours and 03:04 hours, R51 continued to provide night sun service for other rescuing units and search but with nothing found. At 03:04 hours, R51 left the scene and was replaced by R61 (Captain Libby Lee) to continue the task. At 05:16 hours, R80 took over the task from R61. At 06:28 hours, R80 reported some life vests floating in the vicinity and requested MRCC to pick them up.

At 06:45 hours, R82 replaced R80 on the 6th search flight. At 07:04 hours, R80 reported an oil spill drifting to the south-west of Lamma and advised R82 to focus their search at the south-west side. At about 08:45 hours, R82 reported finding some debris in the waters to the west of Lamma Island. At 08:30 hours, R86 replaced R82 to continue the aerial search. Between 08:52 hours and 09:23 hours, R86 was diverted for

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a casualty evacuation in Cheung Chau. At 10:54 hours, R86 finished the search with nothing found.

At 10:43 hours on 2 October 2012, I contacted the senior controller of MRCC and it was agreed that the aerial search would be paused until further notice. However at 10:48 hours, ACCC was informed by Security Bureau that the search would be continued. At 11:55 hours, an updated search plan basically covering the southern HK waters was received from MRCC.

Further flights were then arranged to conduct over-waters search but all with no significant result."

Then, Mr Chairman, he sets out the flight details in seven subparagraphs that can be seen on the screen.

THE CHAIRMAN: Yes. There's no need to detail them. Thank you very much.

MR BERESFORD: Thank you, Mr Chairman.

"At 09:42 hours on 5 October 2012, MRCC stood down search operation and no more flights were required to conduct search."

Mr Chairman, next is the question of CCS, and there's a statement of Mr Zhang Yu. I'm not sure, Mr Chairman, if you've actually made an order or direction as to its reception?

THE CHAIRMAN: We'd like it read. We'll take it as a witness statement that's read.

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MR BERESFORD: Then I'll proceed to read it.

THE CHAIRMAN: Where do we find it?

MR BERESFORD: This is at DLA bundle 1. The translation is at page 33. The Chinese is at page 2, under cover of DLA Piper's letter dated 29 January 2013 at page 1.

THE CHAIRMAN: Very well. If you'd proceed.

MR ZHANG YU (statement read)

MR BERESFORD: Reading from the English translation at page 33:

"I, Zhang Yu ... chief surveyor and senior engineer of China Classification Society, Guangzhou branch ... will state and say as follows:

1.1 I was born in [and that's blacked out];

1.2 graduated from South China Institute of Technology (now known as South China University of Technology) in 1982, majoring in shipbuilding;

1.3 worked in Wenchong Shipyard, Guangzhou from 1982 to 1992 on ship design and shipbuilding techniques;

1.4 was transferred to the Register of Shipping of the People's Republic of China, Guangzhou branch (now known as China Classification Society, Guangzhou branch) in 1992, and had been responsible for approving ship drawings and inspection work;

1.5 was promoted to senior engineer in 1996.

2. I have been engaged in ship design, shipbuilding, ship plan approval and ship inspection work for 31 years. I have experience in shipbuilding, ship repair, ship conversion and ship inspection. I have supervised a vast number of large vessel construction and conversion inspections.

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The Purpose of Submitting a Witness Statement.

3. China Classification Society received a letter dated 9 January 2013 from Lo & Lo Solicitors ('9 January letter'). In that letter, the Commission of Inquiry into the Collision of Vessels near Lamma Island on 1 October 2012 ('Commission') requested CCS to provide a witness statement by its authorised officer to explain the followings:

3.1 the role played by and the exact involvement of CCS in relation to the inspection, survey and certification of Lamma IV;

3.2 the circumstances and manner in which the survey was carried out which resulted in the survey report (defined below); and

3.3 why CCS was in a position to certify that the hull and main deck construction and their dimension had been in compliance with the approved drawings (paragraph 6 of the survey report) when there is evidence that both the side and bottom plating are undersized.

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4. When CCS surveyed Lamma IV, it was only known to CCS as the 28 m aluminium launch (Cheoy Lee Yard No. 4625) at that time. As the survey of the Cheoy Lee Yard No. 4625 was conducted 18 years ago, the surveyor in charge had already retired (now 69 years old), and CCS had assigned me to investigate into this matter.

5. I am authorised by CCS to give this witness statement on its behalf.

6. I hereby attach to this witness statement a bundle of documents which I shall refer to in this witness statement. Numbers in square brackets below denote the page numbers of said bundle of documents.

7. The relevant survey was carried out 18 years ago. I made enquiries with the surveyors of said survey but they could not remember its specific details. I searched the archives, but I have not been able to locate any relevant documents. I shall answer the Commission's questions by referring to the limited documents provided by the Commission, any relevant information I gathered during my investigation, the relevant survey regulations applicable at that time, and the general industry practices of surveying.

The role played by and the exact involvement of CCS in relation to the inspection, survey and certification of Lamma IV.

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8. According to the 9 January letter and its attachments, Cheoy Lee Shipyards Ltd ('Cheoy Lee') subcontracted the construction of the hull of a 28 m aluminium launch (Cheoy Lee yard No. 4625) to Wuzhou Shipyard in Guangxi, the PRC ('Wuzhou Shipyard') in 1995. According to our investigations, at that time Wuzhou Shipyard undertook to construct part of the hull of the said vessel, and after its completion it was transported out of Wuzhou. Wuzhou Shipyard made an application to CCS, requesting CCS to conduct a survey in respect of items 1 to 4, 8 in respect of x-ray film examination, 9 to 11 and 13 ('CCS items') on the survey items list of the Marine Department of Hong Kong ('Marine Department') ... and in accordance with the ship drawings (ship drawing No. NC-391) approved by the Marine Department.

9. After completion of the survey, surveyor Mr Su Chang-tao confirmed on behalf of CCS the completion of the surveying of the CCS items on the survey items list, signed against the survey items list, and issued a survey report on 6 September 1995."

I've passed over the exhibits, Mr Chairman. The survey items list is at page 1, which is at page 10 of the bundle, and that of course can be compared with the survey items list that we're familiar with at page 265

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of marine bundle 2.

THE CHAIRMAN: Yes.

MR BERESFORD: And the survey report is the continuation of that document at page 11 and 12 of the bundle, and which compares to pages 266 and 267 in marine bundle 4.

THE CHAIRMAN: And is dated 6 September 1995?

MR BERESFORD: Correct, Mr Chairman.

THE CHAIRMAN: Yes.

MR BERESFORD: "In my attempt to locate relevant archived documents, I went to the archives of CCS. However, I did not manage to locate any relevant archived documents. Pursuant to clause 8.4 of the 'Instructions for Management of Substitution Surveys of Ships' effective from 20 November 1994, the documents would only be dept for 5 years for a survey of this type."

He refers to pages 4 and 5, which are at pages 13 and 14 of the bundle. These are in Chinese.

THE CHAIRMAN: Yes.

MR BERESFORD: "The circumstances and manner in which the survey was carried out which resulted in the Survey Report.

CCS accepted Wuzhou Shipyard's application, and carried out a survey of the CCS items on the survey items list by conducting visual inspection, verifying the non-destructive testing reports, and witnessing

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tests. When conducting the survey, the surveyor would refer to the Rules for Shipbuilding Surveys, promulgated by the Register of Shipping of the People's Republic of China and effective from 15 April 1994 ('Rules for Shipbuilding Surveys'), for guidance."

He refers to pages 6 to 14, which are pages 17 to 23 of the bundle. Again these are in Chinese and I don't believe we have any translation.

THE CHAIRMAN: Yes.

MR BERESFORD: "The content and manner of survey of CCS items are as follows:

12.1 Item 1, mould loft: mainly involved the inspection of the mould loft floor's environmental conditions, and the conformity of the projection of the grating and hull lines;

12.2 Item 2, hull plating materials test: confirmed that the hull plating materials had the product certificate issued by the American Bureau of Shipping ..."

THE CHAIRMAN: Just pausing there. We've never been provided by anyone with that certificate, have we? The Americans don't have it in their records, and Cheoy Lee are unable to provide it to us as well?

MR BERESFORD: As best as I can recall, Mr Chairman, we've only seen the invoices for that sort of material but no

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certificate.

THE CHAIRMAN: Yes. No certificate.

MR BERESFORD: "... and compared the certificate label against the actual label on said materials. Relevant excerpts from the Rules for Shipbuilding Surveys explaining this item include clause 3.1 [page 9 of the exhibit]: CCS has to 'inspect the product certificates of all materials and products to be used in important structures and components of the vessel, and check their embossed stamps or labels'. Due to the vast amount of ship plates, a surveyor could not and would not at this stage of ship plate certificate inspection ascertain precisely which part of the shipbuilding would a certain ship plate be used, and would only compare the certificates against the actual label on the plates to ensure that the plates in question had valid product certificates.

12.3 Item 3, preparation before welding: mainly involved the inspection of the shipyard's aluminium alloy welding process, the qualifications of their welders and non-destructive testers, as well as their welding equipment, quality assurance system, et cetera. Relevant excerpts from the Rules for Shipbuilding Surveys explaining this item include:

12.3.1 Clause 2.1 [at page 8 of the exhibit]:

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'acceptability of the qualifications of the welders and non-destructive testers' and the relevant requirements;

12.3.2 Clause 2.2: 'acceptability of the welding process, technical conditions, and other important processes' and the relevant requirements;

12.3.3 Clause 2.3: 'inspection of the raw materials and welding rod management system' and the relevant requirements;

12.4 Item 4, keel-laying: confirmed the keel-laying date.

12.5 Item 8, hull construction survey (x-ray examination): CCS's responsibility regarding this item was limited to reviewing the x-ray films and the non-destructive testing report, and the results had met the relevant requirements. The usual practice is, after the completion of hull welding but before the tightness tests, the shipyard would carry out an x-ray examination on the welding. The shipyard would then notify the surveyor to attend the shipyard and review the x-ray films and the non-destructive testing report. In order to ensure that the x-ray examination and the tightness test can be carried out smoothly, the surveyor would usually carry out a visual inspection of the relevant welds before the x-ray examination and the tightness tests.

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12.6 Item 9, fuel oil/deep tanks hydraulic test: carried out a hydraulic test in accordance with the requirements stipulated in table 4.5.2(1) of the Rules for Shipbuilding Surveys [at pages 11 and 12], confirmed that there was no leakage in the compartments, and that there was no significant deforming of the structure;

12.7 Item 10, fore & aft peaks leakage test: as the fore & aft peaks were empty holds, they would be flooded to the full load waterline, and the area above the waterline would be hosed, the result of which passed the leakage test;

12.8 Item 11, engine room flood test: as the Rules for Shipbuilding Surveys had no specific requirements for an engine room flood test, the requirements stipulated in table 4.5.2(1) of the Rules for Shipbuilding Surveys were adopted to confirm that there was no leakage; and

12.9 Item 13, hull hose test: carried out a hose test pursuant to the requirements stipulated in clause 4.5 of the Rules for Shipbuilding Surveys, and confirmed that there was no leakage.

Why CCS was in a position to certify that the hull and main deck construction and their dimension had been in compliance with the approved drawings (paragraph 6 of the survey report) 'when there is evidence that both the

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side and bottom plating are undersized'.

13. First, it needs to be explained that:

13.1 according to the notes at the bottom of the survey items list, the surveys carried out by our surveyors at that stage of shipbuilding were the items that were marked with an asterisk and had a survey date and name of surveyor marked against them;

13.2 the survey report was intended to be a brief description of the actual work done by our surveyors pursuant to Wuzhou Shipyard's application, and the results; and

13.3 what paragraph 6 of the survey report meant was that our surveyor witnessed the measuring of the hull's main dimensions. This was required by Wuzhou Shipyard in order to issue a product certificate. It was a widespread practice for mainland shipyards at that time (please see the product certificate samples at [15-16])."

That's pages 24 and 25 of the bundle. Again, those certificates are in Chinese. I don't believe we have translations.

THE CHAIRMAN: Thank you.

MR BERESFORD: "Regarding what the surveyor wrote in paragraph 6 of the survey report, that 'the hull and main deck construction and their dimensions have been

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inspected and found compliance with request of the drawing', after confirming with our surveyor who wrote the above, I understand it was to explain that the measurements of the hull and the deck's main dimensions (ie length, breadth and moulded depth) had conformed with those marked on the ship drawings. It was not referring to any measurements of shell plating or any specific structural members. As a CCS jargon, 'dimensions' usually meant 'main dimensions', and when referring to sizes (including thickness) of any specific material used, the word 'scantlings' would usually be used instead. At that time the main dimensions were measured by the shipyard with plumb-bob, measuring tape, levelling pipe and pole, and witnessed by our surveyor.

In sum, as noted from the survey items list, CCS had finished surveying the CCS item on the survey items list. The CCS items did not include the inspection of the thickness of the side and bottom plating of the actual hull. According to the survey items list, I believe that the inspection of the thickness of the side and bottom plating should be the responsibility of the surveyor of the Marine Department who was responsible for item 6 (shell and bulkheads) of the survey items list. I consider the substitution of the actual shell plating used for the vessel, and the clear

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division of work regarding surveying responsibilities, are shown in the correspondence between Cheoy Lee and the Marine Department dated 4 April, 25 April, 27 April 1995 as provided by the Commission."

He refers to pages 19 to 25 of the exhibit, which starts at -- in fact I think that's probably a typo, Mr Chairman, because the letter dated 4 April 1995 is page 17 --

THE CHAIRMAN: Yes.

MR BERESFORD: -- page 26 of the bundle.

THE CHAIRMAN: Thank you.

MR BERESFORD: In the last paragraph, Cheoy Lee say to the Marine Department:

"... we wish to inform you that the hull & main deck are to be built at the Wuzhou Shipyard, Guangxi province. As such construction will be surveyed by ZC or CCS. After completion the hull will be transported to Hong Kong and all GRP superstructure and outfitting work will be carried out at our facilities."

At page 30 of the bundle, the letter dated 25 April 1995 from Cheoy Lee to the Director of Marine says:

"We also need a letter from you with a list of all the items that the Marine Department needs to inspect ... The aluminium hull and main deck of the captioned vessel is to be built in China as indicated in

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our letter of 4 April last."

27 April at page 31 of the bundle is a letter from the Marine Department to Cheoy Lee, enclosing the survey items list. It says:

"Please be advised that you may invite CCS's surveyors to carry out surveys on those items marked [with an asterisk]. However surveys of other items marked 'HKMD' should be done by surveyors/ship inspectors of this Department."

THE CHAIRMAN: Thank you.

MR BERESFORD: So that deals with that evidence, Mr Chairman.

Mr Chairman, there are then three matters from the Department of Justice. There's the witness statement of Cheng Yeung-ming.

THE CHAIRMAN: Yes. He deals with the Marine Accident Investigation Section?

MR BERESFORD: Yes. There's a notification about the current position regarding prosecutions; and a letter from the Department of Justice regarding Marine Department Notices.

THE CHAIRMAN: Very well. Perhaps we could deal with the witness statement first.

MR BERESFORD: Certainly. This is in marine bundle 13 at page 5097.

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THE CHAIRMAN: Yes.

MR CHENG YEUNG-MING (statement read)

MR BERESFORD: It's a statement of Mr Cheng Yeung-ming, Chief Marine Accident Investigation & Shipping Security Policy, Marine Accident Investigation and Shipping Security Branch, Marine Department. He says:

"I am a principal surveyor [with] the post [as I have just stated] ... I obtained a class one (steam and motorship) marine engineer officer certificate of competency from UK in 1988 and BSc (Honours) degree in Mechanical Engineering from the University of Hong Kong. Currently, I am a fellow member of the Hong Kong Institution of Engineers and member of the Institute of Marine Engineering, Science and Technology of UK. I joined Mardep in April 1991 as a surveyor of ships. I was then promoted to senior surveyor of ships in November 1995 and principal surveyor of ships in June 2010. I have worked in the Government New Construction Section, Cargo Ships Safety Section, Boiler and Pressure Vessels Division of the Labour Department, Seafarers' Branch, Maritime Policy Branch of Multilateral Policy Division and was posted to the MAISSPB in October 2011."

I should say "Shipping Security Branch". He's got a long acronym for that, Mr Chairman. I'm just going to call it "the branch" if it comes up again.

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THE CHAIRMAN: Yes, very well.

MR BERESFORD: "I make this witness statement on behalf of the Director of Marine, who has been granted leave to participate in the hearings of the Commission of Inquiry appointed pursuant to section 2 of the Commissions of Inquiry Ordinance on 22 October 2012 by the ruling ... made on 5 December 2012. Save where otherwise appears, the facts deposed hereto are within my personal knowledge or are derived from office files and records and sources to which I have access, and are true to the best of my knowledge, information and belief.

In this witness statement, I will explain the structure and function of the MAIS and the division/branch which it belongs, the number of personnel working under this section and how the officers of MAIS interact with other Mardep officers in the performance of their work generally. I will also set out Mardep's views on recommendation number 14 in paragraph 88 of Captain Nigel Pryke's expert report (part 2) dated 3 March 2013 which is, 'whether consideration should be given to removing MAIS from the Mardep organisation in accordance with the Code of the International Standards and Recommended Practices for a Safety Investigation into a Marine Casualty or Marine Incident (Casualty Investigation Code), IMO resolution

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MSC.255(84).'
Background of MAIS.
Taking note of the adoption of the Code for the Investigation of Marine Casualties and Incidents in November 1997 by the International Maritime Organization by resolution A.849(20), Mardep established that MAIS in early 1997 as a section under the Shipping Division which was responsible for the safety inspection and certification of ocean-going and local vessels.
A senior surveyor of ships and two surveyor of ships posts of the nautical discipline were created for the MAIS to investigate all marine accidents occurring in Hong Kong and on board Hong Kong-registered ships.
In January 2000, the MAIS was redeployed from the Shipping Division to the MPD under [the branch]. The scope of investigation was also expanded in May 2007 to cover also marine industrial accidents that occurred on ships while working cargo or repairing in Hong Kong.
Current Structure of [the branch]
[The branch] has an establishment of a principal surveyor of ships, who heads the branch and is assisted by a senior surveyor of ships, three surveyors of ships, and one clerical assistant.
[The branch]'s Relationship with other Mardep officers.

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[The branch] is one of the three branches under the MPD in Mardep. Its main function is to carry out marine accident investigations. MPD is not the regulatory and administrative authorities in Mardep for ship safety and for the Hong Kong port. Its main responsibilities are for the development of technical policies and standards and to make or amend regulations for international and coastal shipping, in particular in areas of safety, maritime security, seafarer and environmental protection.
The marine accidents investigated by [the branch] are impartial and independent. On receipt of notification and reporting of accidents, [the branch]'s officers would carry out investigation and prepare report(s) independently. In the process, [the branch]'s officers would have a working relationship with the front-line officers of other divisions.
Mardep is fully aware of the importance of the impartiality of [the branch] and MAIS. Under the existing procedures, the investigation officer would complete the investigation report and send it via the senior surveyor of ships to the principal surveyor of ships for endorsement before it is submitted to the Deputy Director of Marine. Upon receipt of the report, DD would decide whether a review panel should be

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appointed to study the report. The review panel should consist of experts from those divisions in Mardep that do not have an interest in the incident. The only term of reference for the review panel is to see whether Mardep agrees with the conclusions and recommendations made in the report. The review panel is not to instruct or tell the investigating officer how the investigation should have been carried out or how the report should have been written.
The review panel would submit via the Deputy Director of Marine its comments to the Director of Marine who would make the final decision as to Mardep's position in respect of the investigating officer's report. If Mardep's final position involves implementation of accepted recommendations, the division(s) concerned would be informed of the decision and would be requested to take necessary follow-up actions within their respective ambits.
[The branch] or MAIS does not initiate prosecutions to those who may have violated the provisions in law but will remind the operational divisions concerned of the possible contravention of the law. The divisions concerned must carry out their own investigations for the prosecution of offenders.
Recommendation of Setting Up an on Independent Body.

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Hong Kong is a small city and residents are able to obtain information speedily from the media. Accidents resulting in substantial casualties will arouse great public interests and it is clear that the Government of the HKSAR has the will and determination to address these public concerns. In accidents resulting in substantial casualties, either the Director of Marine would initiate a preliminary enquiry which may help the Chief Executive to appoint a Marine Court to investigate and inquire into charges of incompetency or misconduct on the part of masters, mates or engineers of ships where considered necessary or, the Chief Executive could appoint a Commission of Inquiry to investigate into the incident. It is considered that with all the built-in measures in hand, the independency of investigation into marine accidents is ensured. The establishment of an independent accident investigation board similar to the United Kingdom or Australia may not be appropriate for Hong Kong's situation."
THE CHAIRMAN: Thank you.
MR BERESFORD: Then, Mr Chairman, there's just an update on the prosecutions, which is at marine bundle 13, items 87 to 87D. 87 commences at page 5073. Essentially this reports that the Department of Justice is considering some prosecutions. The ones they've mentioned are

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fairly technical in nature. They're not manslaughter endangering life at sea. But no final decision has been made. So I don't propose to go into that in any more detail.

THE CHAIRMAN: Just give me a moment. Yes. That, then, is the position to which Mr Zervos testified at a much earlier stage, or, rather, addressed the Commission at a much earlier stage.

MR BERESFORD: Yes.

THE CHAIRMAN: Thank you.

MR BERESFORD: Then there's the matter of the Marine Department Notices and the authority under which they are issued, which is addressed in the Department of Justice's letter at page 5071 of the same bundle.

THE CHAIRMAN: Yes.

MR BERESFORD: They respond to the questions of:

"(a) whether the Marine Department Notices (including No. 131 of 2012) were only advisory in nature; and

(b) whether or not there is such a power to make the guidance as set out in the [notice] mandatory, or does the Director need new legislation to do so."

THE CHAIRMAN: Yes.

MR BERESFORD: They say:

"It has been Mardep's understanding that guidance in

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the [notices] are advisory in nature, except for certain matters specifically provided for by statutory provisions. For example, the provisions as to the regulation of traffic in relation to the fireworks display in [notices] have been issued pursuant to the Director's statutory power expressed in Regulation 66A in part VIII of the Shipping and Port Control Regulations (Cap 313A):

'(1) On the occasion of any fireworks display held or organised in or upon any part of the waters of Hong Kong, the Director may prohibit or regulate all traffic upon or in the vicinity of such waters and may give to any such person such directions as he thinks fit for the avoidance of accidents and the safety of persons.

(2) Any person who fails to comply with any prohibition or regulation of traffic, or direction given, under paragraph (1) commits an offence and is liable to a fine at level 1.'"

THE CHAIRMAN: Remind me, if you would, the Marine Department Notice of 19 September of last year, did that state the power under which the closure order was made?

MR BERESFORD: I don't believe it did. It's in miscellaneous bundle, as I recall, as an attachment to the document commencing at page 57. I'm informed that it doesn't, Mr Chairman.

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THE CHAIRMAN: Thank you. That was certainly my memory.

MR BERESFORD: Then the Department of Justice go on to say:

"Further, the Director may give to an owner or his agent or a coxswain or other person who appears to the Director to have control over a local vessel such directions as he thinks fit in any particular case for inter alia for ensuring the safety of the vessel in the waters of Hong Kong. Such discretionary power is provided in section 24(f) of the Merchant Shipping (Local Vessels) Ordinance (Cap 548). Similar power is provided in section 16(f) of the Shipping and Port Control Ordinance (Cap 313). Whether which Ordinance applies depends on the definition of the vessel covered by that particular Ordinance.

The effect of non-compliance of the directions are provided in section 68 and section 84(6) of Cap 548 and sections 16A and 61 of cap 313.

Whilst the said provisions may be construed to mean that the Director's discretionary power to issue mandatory 'directions' for the safety of the vessels in the waters of Hong Kong covers the imposition of safety measures, it is highly doubtful if the directions can be used to impose duties more onerous than those expressly imposed by the statutes, particularly when the directions are not necessarily gazetted. Consideration

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arises in two situations:

(1) where the statutory provisions expressly set out a mandatory requirement (for example the number of life jackets) but the directions are used to top up such requirement over and above the statutory prescription; or

(2) the directions are used to impose a particular requirement which cannot be found in any of the statutes (for example the donning of life jackets by all children whilst they are on board).

which, without the voluntary co-operation from the owner or coxswains or those in control of the vessel, the directions may be susceptible to legal challenge."

THE CHAIRMAN: So there is a lacuna in the law if the advisory notice, for example, as to children's life jackets, even simply the number -- all vessels must carry a child's life jacket for every child on board the vessel -- that would not be enforceable?

MR BERESFORD: It's not enforceable.

THE CHAIRMAN: A lacuna in the law?

MR BERESFORD: Yes, Mr Chairman.

THE CHAIRMAN: If that is to be a desired objective.

MR BERESFORD: Yes.

THE CHAIRMAN: Thank you.

MR BERESFORD: Mr Chairman, there are two other matters that

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I just might mention.
There's the CCTV.
THE CHAIRMAN: Yes. That's the CCTV from the Lamma --
MR BERESFORD: Lamma Power Station pier, and I understand there has been some correspondence about that, but so far, nothing has been recovered.
MR McGOWAN: I believe it was collected and was taken to the Police Technical Branch.
THE CHAIRMAN: I'm not looking at you, Mr McGowan.
Ms Lok, this is months ago that we asked for this to be looked at.
MS LOK: May I have a moment, please, Mr Chairman.
Mr Chairman, I'm afraid that I will need some time to get into the details. Can I suggest that we write a letter to the Commission to give all the details in the afternoon?
THE CHAIRMAN: Well, really, what we want to know is whether or not anything of use to us has been found.
MS LOK: As I understand it so far, no.
THE CHAIRMAN: Thank you.
Mr Beresford?
MR BERESFORD: The last matter is a similar question relating to the radar retrieval.
THE CHAIRMAN: Yes. Who was looking at that?
MR BERESFORD: That was the police, I do believe, who were

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trying to see if any material could be recovered from the memory.
THE CHAIRMAN: Ah, that's right. On Sea Smooth?
MR BERESFORD: Yes.
MR McGOWAN: I thought it was actually Lamma IV. Lamma IV's radar was removed by the Police at a very early stage.
THE CHAIRMAN: Very well. Perhaps it's both vessels.
What's the position as far as that's concerned?
MS LOK: I must apologise, Mr Chairman. We will write a letter to the Commission in the afternoon with the details.
MR BERESFORD: I wonder if there might have been some confusion between the two issues. I think probably CCTV is in fact Hongkong Electric's issue.
THE CHAIRMAN: No, I think the Marine Police were going to examine it to see if they could find something that Hongkong Electric can't find.
MR BERESFORD: Very well.
THE CHAIRMAN: That's my memory.
MR McGOWAN: Yes. It was actually the memory they were going to look at and see whether there was anything in there.
THE CHAIRMAN: Yes.
MR BERESFORD: Mr Chairman, I'm not aware of any other matter that needs to be dealt with before the Commission

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retires to consider its decision.
THE CHAIRMAN: We're not going to retire and do that; we're going to receive submissions.
MR BERESFORD: Submissions, yes. Closing submissions. Any other evidential matter, I should have said.
THE CHAIRMAN: Are there any evidential matters that any counsel wishes to remind us of that we haven't dealt with?
Mr McGowan?
MR McGOWAN: None that I can recollect.
THE CHAIRMAN: Hong Kong & Kowloon Ferry?
MR CHAN: Nothing from us, Mr Chairman.
THE CHAIRMAN: Ms Lok?
MS LOK: No.
THE CHAIRMAN: Thank you.
Moving forward then to the receipt of written and oral submissions. Has contact been made with Coxswain Lai as to whether or not he wishes to make any written submission or whether or not he wants to be represented?
MR BERESFORD: Yes, I believe a notice has been given to notify him.
THE CHAIRMAN: Do you have a copy of the notice to him?
MR BERESFORD: No, Mr Chairman; it was done by telephone.
THE CHAIRMAN: And he was told that he could make written and oral submissions if he wished?

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MR BERESFORD: He was, I'm instructed, yes.
THE CHAIRMAN: And that oral submissions would be beginning on Monday?
MR BERESFORD: Yes, Mr Chairman.
THE CHAIRMAN: Has he indicated whether he wishes to avail himself of that?
MS ABDULLAH: He said he would have to think about it.
THE CHAIRMAN: Thank you.
What then of the other crew members on the Sea Smooth? Have they been contacted?
MR BERESFORD: They've all been called, Mr Chairman.
THE CHAIRMAN: And what, if anything, is their response? Are they also thinking about it?
MR BERESFORD: They've just acknowledged it, Mr Chairman.
THE CHAIRMAN: Thank you.
Very well. Before we adjourn, I'm going to give some further directions to assist the parties to comply with what it is that we seek by way of their help.
We would ask that counsel for the Commission provide us -- all parties are to provide us with written and electronic submissions, if they wish to make submissions.
The counsel for the Commission are to provide us with their submissions by 5 pm on Saturday. We ask that counsel for all other parties, the involved parties, as

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we've called them, provide us with written and electronic submissions, if they wish to make submissions, by 8.30 am on Monday.

We will then proceed to take oral submissions from counsel for the Commission, to whom we have allocated two hours, on Monday, beginning at 10 o'clock. And then we'll follow in sequence with other counsel.

Certainly as far as counsel representing Hongkong Electric and the crew of Lamma IV, first, after counsel for the Commission; then counsel now, as it is, for Hong Kong & Kowloon Ferry and Islands Ferry; then we would take any submissions that are to be made by the crew of Sea Smooth, or any one of them. But we're minded then to permit Mr Dominic Yeung to make his submissions out of order, to accommodate his other commitments, unless anyone has an objection to that.

Then we would proceed with the other parties in sequence.

MR McGOWAN: If it helps, sir, my learned friend did make a mistake yesterday. Mr Grossman is actually available on Tuesday. I think it's just Mr Sussex who is not.

THE CHAIRMAN: Right.

MR McGOWAN: That might give a little bit more flexibility perhaps.

THE CHAIRMAN: We'll be hearing from Mr Grossman on Monday

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if he wishes to address us.

MR McGOWAN: Yes. Thank you.

THE CHAIRMAN: Are there any other matters that counsel wish to raise?

MR BERESFORD: Not on our part, Mr Chairman.

MR McGOWAN: No, thank you.

THE CHAIRMAN: Perhaps Ms Lok has a response to our enquiry.

MS LOK: Yes, I have a useful update. There are in total three machines in respect of the CCTV. The first one, I believe that we have provided an answer to the Commission. For the second machine, it is --

THE CHAIRMAN: Meaning a negative result?

MS LOK: Yes. Nothing helpful.

THE CHAIRMAN: Yes.

MS LOK: The second one, scanning is still in process. And the third one, I'm afraid, is quite broken down and it needs to be repaired before access can be gained into the contents thereof.

THE CHAIRMAN: So for our purposes, nothing of any use?

MS LOK: Yes.

THE CHAIRMAN: Thank you.

Very well. We'll adjourn now and resume with submissions at 10 o'clock on Monday.

(1.00 pm)

(The hearing adjourned until 10 am on Monday, 11 March 2013)

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