

Bourbon Dolphin: Public Hearings Process

Public Hearings of September 25 to 27, 2007 in Oslo (Transocean)

- **Witness No. 4 took the stand:**

Name: Adrian Brown
Date of birth: 18 September 1971
Post: Rig Manager
Address: Houston, Texas

Brown started in what is now Transocean in 1995 and worked there on a technical development programme (trainee programme), focusing on inculcating greater understanding of rigs. As part of the programme he began to work as a drilling engineer on a rig in the North Sea. In 1997 he was stationed in an operational function in Nigeria and stayed there until 1998, before he continued the project in Cameroon with semi-submersible rigs. After one year in Cameroon he worked a year in Paris in a project management group before he asked for an operational posting that took him to South Africa. After a year in South Africa he became rig manager on a project in Angola, where he was for three years. In September 2004 he returned to the United Kingdom and became rig manager on the "Transocean Rather". The post was shore-based; he remained in it until August 2007 until he became project manager at Transocean's head office in Houston.

His duties as rig manager included assisting in making the preparations for all rig moves. These preparations generally started several months before the rig was to be moved; one looks at the mooring system and prepares mooring analyses. The analysis was performed by Trident, on assignment from Chevron. Trident first prepared a draft rig move plan, which was considered by Transocean. They prepared the procedures jointly with Trident and Chevron, and ensured that the procedure was so thorough that it covered all factors and risks of the operation. There were a number of conferences and meetings, and finally there was a last meeting with all parties, at which inter alia the choice of vessel and equipment was discussed. Then one was ready to move the rig. He could not say exactly when the various meetings were, but he seems to remember that there was a meeting just before Christmas 2006, while the rig move procedures were completed in March 2007. He was not certain whether the meetings had been minuted. E-mails were sent out after some of the meetings.

Brown testified that he had worked quite a long time with Trident and that Transocean had a contract with them. He himself was not on board the "Transocean Rather" in connection with the rig move. He was involved in the previous rig move in the same way as this time, that is, ensuring that the necessary preparations such as the performance of mooring analyses, were done.

The Commission showed Brown p. 2 of the rig move procedures on which it was stated that it was approved by him. This means that he had ensured that Transocean had gone through their areas of responsibility. The Commission referred to the fact that on page 6 there is a chapter called "personnel responsibilities", inter alia that it is Section 2.3 that mentions the Transocean towmaster, and Brown was asked to explain whether Transocean had any influence on the designation of towmasters.

Brown testified that at one of the meetings they had a discussion about this, that they were involved in their selection, and that the role of marine representative and towmaster was a

shared role. They thought that two towmasters were sufficient, and saw no advantage in having more people there. They had practiced the double-role system before and it had functioned very well. Brown testified that he had a regular telephonic meeting with the rig from Chevron's office at 07:45 at which Chevron's representative and towmaster participated. He himself spoke to the Offshore Installation Manager about 07:15 every day, and again in the afternoon. He himself did not keep a log of what was said at these meetings. On 12 April he held the morning conversation with the rig and was then told that everything was going according to plan. At 15:00 he had a meeting with Chevron. Prior to that he held a short conversation with the Offshore Installation Manager at which he was informed that they were working with the last anchor and that everything was going to plan. At 17:15 he was informed of the accident.

In response to questions as to whether he was involved in the choice of technical solutions, Brown testified that he had been at one of the meetings in the Transocean office, at which Chevron and Trident had been present. Here various options were discussed – the one was pre-laid mooring and the other was use of chain extensions. There was no great difference between them and was concluded that chain extensions was the best solution. He could not remember whether they discussed the use of fibre, but he does remember them discussing the use of wire insert. They had used a pre-laid system with Shell, who had been the previous client, and then they used a combination of both chain and wire. To the best of his knowledge, Rather had no experience with fibre insert. Brown testified further that Rather had operated at similar depths in Africa and in the Gulf of Mexico, but under those conditions inserts were not necessary, they could use their own system. It was only on Shell's job that extra wire or chain was necessary, and for that reason they used a pre-laid system.

On board the "Transocean Rather" it was the Offshore Installation Manager (OIM) who had the overall responsibility. Several individuals reported to him, including the - rig supervisors (including the maintenance supervisor and barge engineer), safety officers and several others. The towmaster also reports to the Offshore Installation Manager and works in close collaboration with the barge engineer. The towmasters keep the Offshore Installation Manager informed on the development of the operation and give him advice, and shall ensure that the anchor-handling operation is performed in a safe and efficient manner. Alternatively, the towmaster informs the barge engineer.

In response to questions as to whether they had exercises that involved the capsizing of a vessel, Brown testified that they did not consider capsizing a foreseeable risk, nor did they for the rig either. In response to questions as to whether he was aware of incidents that had involved the capsizing of an anchor-handling vessel previously, Brown replied that he was only aware of a capsizing that had taken place off the coast of Africa but was unaware whether that was during a rig move. In response to questions as to whether capsizing was a relevant scenario that ought to be looked at in a risk context, Brown testified that it was difficult to say. It was certainly a fact that there has been a capsizing now, and even if we do not know why, such a scenario is something that should be included in future assessments.

Brown described the operation in question as more challenging than a usual operation. There were several factors that had to be seen in relation to the mooring equipment. In response to questions as to whether the risk analyses that were applied covered all risk factors, Brown testified that it covered all foreseeable risks of which they were aware at the time. The identified risks were taken into account when they made the rig move procedure, and it was very thorough as regards looking at the loadings to which the vessel could be exposed. The vessels could also make comments on the procedure..

In response to questions as to the difference between this procedure and the one prepared for Location G, Brown replied that there was little to distinguish them. During the deployment of the anchor, it was decided to have a vessel to assist by taking the weight of the chain. The

capacity of the winches on the rig when they are in dynamic mode was 220 tonnes, and for static modus with the brakes on, about 700 tonnes. In response to questions as to how long the rig move was planned to take, Brown replied that the most optimistic estimate was the one in the rig move procedures, but the time listed did not include extra time for bad weather or equipment breakdown on the vessels or the rig. It is always difficult to know what the weather would do; if, for example, there was a storm they might have to tow the rig into protected water before they could continue. Transocean did not perform independent deployment and raising analyses, since Trident had already prepared such analyses, and they seemed thorough and had been reviewed by Chevron.

In response to questions as to how they arrived at the figure of 180 tonnes in bollard pull, Brown testified that the mooring analyses had been prepared by Trident. He himself had not gone in and looked at the analyses. Transocean also has a guideline that shows that a minimum bollard pull of 175 tonnes would be necessary at such water depths, so that 180 tonnes seemed like a fair estimate. The Commission referred to the fact that they had not seen any good explanation of how the figure of 180 tonnes had been arrived at, and Brown was asked to amplify this if he had any knowledge of it. He testified that the result of the studies was reflected in the rig move procedure, for example on p. 22, where static analyses are made. Brown assumed that Trident had a software program that was used to arrive at the figure, but said that Trident was the best party to explain this. He himself noted that Trident's figure was higher than Transocean's own guidelines [175 tonnes] and then he was content, and did not ask Trident for any more details about how the figure was arrived at. Transocean's own guidelines, to which he referred to, are general and do not involve specific areas.

Brown continued the testimony by stating that he was present at the "wash up meeting" following the first move. Present were Macklin, Johnson, Sutherland, Milne (asset manager), and probably others as well. It was a big meeting. It was either himself or Macklin who took the initiative for the meeting. They had a fixed agenda for such meetings. At the meeting they raised choice of vessel, rig equipment, mooring system, in general most aspects, so that the next rig move could take place as safely and efficiently as possible. He remembers that they discussed making the loads a little lighter because of problems with the brakes on the anchor winches. The general question was whether there were particular non-conformances, but as far as he could remember there were none. The vessels that then participated performed the job in a good manner. He thinks some action points emerged from the meeting, but he could not remember seeing any minutes over and above the action points.

After the accident they also had more meetings. They looked at a number of factors such as loading, stability, personnel questions, verifications, and in general all factors were reviewed. The new procedure that was created after the accident was not so very different from the original, but it was more specific on individual points: Inter alia they asked for verifications from the vessel, and the need to discuss bearing deviations with the vessels. They also discussed why the vessel had a drifting problem, looked at the current conditions and discussed deployment of a current meter from the rig. The methodology of the revised plan had not changed and he did not think that the figures used in the original plan had changed, but he was not sure about this. Some minutes from these meetings were prepared, as far as he remembers.

Brown was asked whether Transocean had routines for systematisation of experiential data. He testified that one learns something from every rig move. At head office in Houston there is a big staff that inter alia prepares manuals for the company, but he did not know how the figures in Transocean's manuals were produced, but he assumed that it was on the basis of experience. Those who make the manuals receive data from various sources, inter alia modelling programs. Brown testified that they had a global reporting system in which a certain amount of information was reported, and that this information was available to

everyone in the company. In response to questions as to whether this data formed the basis for HAZID/HAZOP, Brown testified that risk analyses are a broad concept with various levels of detail. Risks are, however, incorporated into rig move procedures and these also show lines of responsibility. If anybody wants to stop an operation, they have a right and duty to do so. The preparation of rig move procedures is also based on empirical data, and many of the empirical data come from local mooring studies.

In response to questions as to which vessels participated in the previous move, Brown remembered that two of the vessels were the "Highland Courage" and the "Highland Valour". These were described favourably in the post rig move report. In response to questions as to when he was informed about the near-collision, Brown replied that he did not get to know about it until after the capsizing.

Brown was asked why the rig move procedures did not contain instructions for correcting non-conformance in the event of drifting away from the anchor line. He then testified that the procedures covered general matters, and drifting was something they regarded as being able to be rectified there and then by the experience of the vessel master. Nor was it expedient to make a thick book about all conceivable scenarios. The Commission referred to the fact that, earlier in his testimony, he had said that this was a more challenging operation than usual, and asked him to amplify this. He then testified that there were greater weights than in a normal rig move and that the environmental conditions west of Shetland are challenging. The Commission asked whether it was not then foreseeable that a vessel can get into a drifting situation. Brown testified that it was foreseeable that a vessel could drift, but it is a situation that can be remedied by the vessel. He was also asked whether drifting can be a problem for the rig, and replied that it would be a problem if they crossed the line of an anchor that had already been set out. After the accident they had made an alteration to the procedure that shows a corridor that the vessels should keep inside, but not how they should keep themselves inside the corridor.

He was also asked whether they had conducted exercises after the accident that involved capsizing of vessels. Brown testified that they had discussed matters related to capsizing of vessels, but he did not think that they had conducted any exercises on this on the rig, and he had not asked them to exercise in what to do if a vessel drifts away from the line. Asked by the Commission whether they ought not to have done this when they had had a near-collision and a casualty, Brown replied that they had held exercises as regards procedures, so that they were well prepared. Transocean had guidelines for exercises and here major emergencies and scenarios are discussed and covered by the management system. One of the exercises is about what is to be done if a vessel collides with the rig. After the exercises he was accustomed to ask the Offshore Installation Manager what they had learnt, and he makes sure that the Offshore Installation Manager has evaluated the exercise and written a report about it. He also testified that the global reporting system allows him to see what exercises have been held. When they go through preparedness, they have an external audit from shore-based personnel who evaluate the exercises. When they get a new client, they always hold an exercise to see that the procedures are in place.

After the Commission had asked its questions, Attorney Lund Mathisen wanted to ask Brown questions about information in a journal article that discusses "notices" issued to Transocean from the Health and Safety Executive (HSE). Attorney Horneland pointed out that Brown had no knowledge of the article and Attorney Craig considered that the article had no relevance to the questions to the witness. Brown nevertheless confirmed that he was aware of the two notices and that an appeal against them had been lodged.

Attorney Lund Mathisen asked why the anchor chain was cut. Brown testified that the decision was taken when the operation was no longer a rescue operation but a salvage operation. There was a certain risk involved in the vessel being connected to the rig, and if

the vessel sank it would pose a threat to the personnel on the rig. If a vessel had been deployed between the "Dolphin" and the rig in order to hold the chain up it would, according to Brown, be a threat to the grappling vessel. The safest thing to do was therefore to cut the chain. Brown was aware that Smit had been hired to try to salvage the "Dolphin", and he was not aware that Smit had a different opinion on whether the chain should have been cut. Transocean's worry as duty holder was first and foremost the safety of the personnel on the rig. Brown also testified that SOSREP was present and made the decision to cut the chain.

Attorney Craig asked Brown to explain "SOSREP", and he replied that SOSREP is a representative of the Government who shall ensure that a crisis is handled optimally. SOSREP becomes involved in major emergencies, and was present in Aberdeen. Brown testified that they had to have SOSREP's approval for all importance decisions. SOSREP was given an office next to the emergency room, was aware of everything that happened, and approved the plan. Brown himself had no direct contact with SOSREP, but he knew that SOSREP was involved in the discussions about cutting the anchor chain and made the decision that this was done.

Craig then asked what Brown meant when, earlier in his testimony, he referred to the fact that loading could compromise the vessel's brakes, and he clarified that he meant the brakes on the rig's winch, and that this has loads specified by the manufacturer that they cannot exceed. That was why a vessel was to assist to relieve the weight. Craig also asked about the rig's current meter, and Brown testified that this is an aid used when they are drilling, since the current can be of significance for drilling operations. and that it is not used during the rig move. To further questions from Craig as to whether they also held Man Over Board (MOB) boat exercises, Brown replied that they held these regularly, and that they were enshrined in the safety management system, but that he could not say how often they held such exercises. He assumes that this also involved MOB boats from the standby vessel and possibly the anchor-handling vessels.

Attorney Lund Mathisen asked questions about how much wire they had on the rig at the time of the accident. Brown testified that at that point in time they were connected and that the connection went between the bolster and the fairlead and that the load on the wire was outside the system. In response to questions as to whether they could have run out wire after the capsizing, Brown replied that it had been decided that they should not change anything. Lund Mathisen referred to the fact that changes were made, in that they subsequently cut the chain, and asked whether the rig could have paid out wire. Brown testified that the current came from all directions and that the safest thing for them was that the vessel came as far as possible from the rig; in case the current turned, the vessel could then have changed bearing regardless of how much chain and wire was out. Against this background, it was decided by SOSREP to cut the chain. He also testified that they could have paid out wire, but that the vessel still constituted a safety hazard if the current were to change. In response to questions as to what current measurements they undertook on the rig, Brown replied that the current meter had not been deployed, so that they relied on information from the vessels.

Asked by Attorney Craig what effect the running-out of the wire could have had, he replied that if they ran out more wire, that could have made the vessel more unstable due to the weight of the wire.

- **Witness No. 5 took the stand:**

Name: Ronald Campbell Mathieson
Date of birth: 25 May 1948
Post: Technical Superintendent for Marine Compliance, Transocean
Address: Aberdeen, Scotland

Mathieson testified that he started in the offshore industry in 1976, without previous experience at sea or on rigs. He had been with the same company for 31 years in all, and all his experience is with oil rigs. His responsibility is to provide technical assistance to the rig manager, and to overview proposed rig move procedure and report to the rig manager.

Mathieson was shown the rig move procedure, in which his name is shown under "approved", but lacks a signature. The Commission asked him to confirm information received to the effect that he was on holiday at a point during the planning, but assumed that he participated in the preparation of the procedures anyway. Mathieson confirmed this. He also confirmed that he had been involved in the previous rig move procedure and that he had participated in discussing draft procedures.

Asked to what extent he could remember having been in contact with personnel on board the rig in the period from 26 March until after 12 April, Mathieson replied that he did not remember direct contact with the rig. He was, however, generally in contact with all the rigs in connection with various questions. These may be questions by e-mail or telephone, but he cannot remember them, nor any contact with the rig related to the rig move. His contact was with Trident and the rig manager.

Asked whether he was involved in the choice of technical solutions for the mooring system in 2005, he answered in the affirmative. He participated in early meetings and discussions about how it could be done. Prior to this he was involved in the development of Benbecula, which is also a deep-water well, and he was involved with how it could be done for the Rosebank locations.

Further, to the question of whether he reacted to the loads that were seen during the run-out of the chain with regard to the capacity of the winch, Mathieson replied that he did not react to this. He looked at the calculations and evaluated the information. The values did not look different and seemed probable and acceptable. As regards the difference in the rig move plans for Locations G and I respectively, Mathieson did not recall that there were any special differences. Nor does he recall any big differences for the deployment method between Locations G and I.

Asked whether it was the case that he had not signed the plan, but knew the content of it, Mathieson confirmed that this was correct. As regards the focus he had had on the implementation of such a plan, Mathieson replied that he went through the entire plan from start to finish. Certain parts of the plan, for example responsibility for the early parts of the plan, he can recognise quite easily as these parts are fairly standardised, and can be reviewed quite quickly. He focuses on the viability of the proposals and the tasks the rig must perform. He must be convinced that this was feasible for the rig, and that they do not pose any undesirable risk. It is the practical and physical parts of the plan on which he must concentrate. He reviews the plan from beginning to end, but some parts he skips. They know the locations, and know that the rig is being moved from A to B. In addition, he looks at the distance, and the various aspects around how they are to be achieved.

To questions whether this means that he is concerned with the calculation results in themselves, and what significance they might have for the rig, Mathieson answered in the affirmative. He does not question formulae or principles, and does not recalculate the

arithmetic, but he looks at output data and the weights involved, that this looks familiar and what can be expected for the operation. He looks at things like whether they have used the proper chain diameter, the proper length and so on. If he has any questions about weights or anything else in the procedures, he contacts those involved in the preparation of the procedures. Usually an explanation can be obtained, otherwise they can go through various aspects jointly.

Asked whether he had any objections to this plan, Mathieson replied that he only had one question that he could remember, and this was a proposal to have the anchor-handling vessels connected to the chain, and that they should also have a wire from the rig's crane at the same time. He was concerned that it might be difficult to do both things at once, and that to have the chain connected could restrict the vessel's manoeuvrability. But he clearly remembers contacting Trident about this, and saying that it might be too much to ask; but after a discussion and an explanation he was satisfied that it could be done if they were asked to do it.

To questions about whether he had seen the new revision of the rig move plan that was prepared post capsized, Mathieson replied that he had seen it. His understanding was that when everything had been prepared, the plan should continue as before and that anchor no. 2 would be deployed. He was not aware that there was a new method, for the rig was moored with a number of anchors, and this was the last to be deployed. He testified further that it was his perception that the original plan was followed in the deployment of anchor no. 2.

As regards the wash-up meeting after the first move, Mathieson replied that he had participated at a wash-up meeting, but he could not remember the details discussed.

The Commission also asked how he perceived the rig move plan's ability to handle risk, and referred to what he had said in his testimony to the Health and Safety Executive (HSE). Mathieson could not recall a formal interview by the HSE.

Questions were then asked about whether he could remember having commented to anyone about a situation in which an anchor-handling vessel was badly out of its line position, and measures that could be taken in such a situation. Mathieson replied that after the incident there was a discussion and he remembers drifting being discussed. To further questions about what were the correct measures to take when a vessel had drift, he testified that it was not uncommon for a vessel to come offline. One would deploy the anchor in a particular bearing, and of course they could be right or left of the track because of elements such as wind, waves, weather. He had also previously seen vessels getting drift a little off line, but them managing to manoeuvre back again. He had also seen vessels that were well off line, due to an error or the weather.

His general impression is that it is not unusual for a vessel to get off line, but that it is important to get them back on the line before they begin to pay out the anchor to its final position. This may be accomplished by changing the vessel's performance, or by changing the job at hand. It is different in each situation, and depends on what is happening on the vessel. Typically, however, they will come back to the line before they begin to deploy the anchor.

There was discussion of how this can be related to the HSE questioning, and after a discussion it was decided that no reference shall be made to this questioning in the testimony before the Commission.

Mathieson was asked about corrective measures when a vessel does not hold its position, and why these are not described in the procedure or the subject of issued instructions. To

this he answered that procedure says what one is to do, but conditions on site, for example environmental conditions that apply there and then, must be decided by those involved on site. Depending on the forces that have driven the vessel off line, they must be solved and the vessel must come back up line. He testified further that it is, moreover, not unusual in rig moves for a vessel to come off line. The corrective measures must be discussed and chosen by those on site.

Asked why such corrective measures are not enshrined in a written procedure, Mathieson replied that a procedure tells you what to do, but one cannot be too prescriptive, for example if one says to the vessel: if you are x metres off line you must do such and such, this may perhaps imply that the vessel thinks it is fine until they reach point x, which might by no means be the case. He testified further that there may be things happening on site that mean that corrective measures must be taken earlier, so that one cannot prescribe to the master what he is to do. The vessel has a bearing it must hold and it is up to the master whether he starts to starboard or port. He does not think that it would be right if a procedure were to give specific criteria that had to be followed, or if it said that the master had to go to starboard or port.

Mathieson was then asked whether it was the case that instructions were omitted because there was a danger of their being misunderstood, but he replied that if one is too prescriptive in a procedure people can misunderstand this as meaning that one does not need to do anything until one is in the situation described, whereas the contrary may be the case. One can prescribe a bearing, but one knows nothing about wind or waves on site. For him it is implicit in the procedure that one should maintain one's bearing.

In conclusion, Mathieson said that he now remembers that he met the HSE on one occasion in Aberdeen, but did not perceive it as a formal interview as such.

- **Witness No. 9 took the stand:**

Name: Patrick Michael O'Malley
Date of birth: 30 August 1964
Address: West Yorkshire, England
Post: Offshore Installation Manager (OIM), "Transocean Rather"

O'Malley began to work offshore in 1985. He has worked for Transocean for 22 years through various company mergers and has worked his way up through the ranks on the rigs. He has been Offshore Installation Manager for approximately eight years. His duties as Offshore Installation Manager include operating the "Rather" in a safe manner. He is the senior manager on board and has responsibility for the safety of the personnel on board.

He came on board in the afternoon of 28 March. He was not on board when anchors nos. 2 and 3 were deployed again after the accident. O'Malley testified that the "Transocean Rather" was the first rig he had been on that worked at such depths. He was shown a draft of the rig move procedures and when he came on board on 28 March he went through the final procedures. He held a meeting on the evening of the 28th with the two towmasters, Watson and Sapsford, the Trident engineer and the barge supervisor who were on board at that time. The Commission referred to section 2.0 of the rig move procedures discussing personal responsibility, and to section 2.2, discussing the role of the Offshore Installation Manager. He had seen the text when the procedures were under preparation, but had no comment on them. The Commission referred to the witness testimony by Macklin from Chevron that it was advantageous that the marine representative and the towmasters were united in a single role, and wondered what O'Malley thought of such a double role. He testified that he did not regard it as any major problem and that communication was always good.

He was in contact with the shore-based management via the rig manager, who is always available. They had daily operations conference calls in the morning, around 08:00. During the rig move the conference call was at 08:15. They also had a conference call in the afternoon, around 16:00. As Offshore Installation Manager he had the authority to stop an operation, but others on board also had such authority. He had no authority over the vessels as such, the masters had that, but he had authority within the 500 metre zone and over the operations in progress there.

O'Malley testified further that he was not directly involved in the choice of technical solutions for the mooring system. He did not have a marine background, and was more involved in matters related to drilling. Asked what the difference was between this plan and the revised plan after the accident, he testified that they have now implemented measures if a vessel is off line, and there is more communication related to the vessels' stability and its control. Asked how long the operation was planned to take, O'Malley replied that he was not sure.

Asked whether he also had the supreme responsibility for safety on board the rig, he replied in the affirmative. He testified that risk assessment was performed through various parts of the job, for example handover of pennant wire, and the rig move procedures were in themselves part of the risk assessment process. Asked whether he had knowledge of risk that were relevant to when the vessels were to run out anchors, which were an integral part of rig safety, he testified that the risk involved in anchor-handling were covered by the rig move procedures, whereas risks to which the vessels are exposed are handled by them. As Offshore Installation Manager he had the responsibility for the performance of an operation that takes account of all foreseeable risks. The risks were taken into account in the rig move procedures. He did not recall whether risks related to a sinking vessel were covered by the risk analyses. Collision with the rig and damage to the rig were what was foreseeable. The procedure goes into detail about known forces. Whether there were unknown forces in the procedures was something he was not sure about. Asked whether the risk analyses took into

account the currents, he did not think that the current during the operation was stronger than that described in the procedures.

The Commission referred to the meeting that was held on 28 March concerning the rig move procedures and asked him to amplify what was discussed. O'Malley testified that they spoke generally about safety aspects of the operation, recovery of anchors, towing and deployment of anchors, and they reviewed the whole procedure. The weather was discussed in general terms, but not specific weather criteria. He testified that he had participated in the first move from Invergordon to Location G. He could not recall attending a wash-up meeting after the move. Nor had he attended a wash-up meeting after the accident. It was the marine supervisor who participated in the meeting.

Asked whether there was a risk to the rig if a vessel drifts off an existing anchor line, O'Malley replied that there could be damage to an anchor line. To further questions whether there should be risk analyses for this, he replied that it is a foreseeable risk that should be covered by risk analyses. Asked whether the grappling undertaken by the "Highland Valour" was a successful corrective measure, he replied that it was partially successful.

O'Malley began work at 06:00 on 12 April. At 06:00 he visited the office, then he attended the crew briefing at 06:30. After that he went to a morning meeting at 07:15 with the marine supervisor. At 07:45 he had a phone call with shoreside and at 08:00 had a conference call with Chevron's shoreside office and their representative on board. He did not follow what happened with the run-out of anchor no. 6. Nor were any problems with the run-out of anchor no. 6 brought to his attention. He was not aware that the "Olympic Hercules" had drifted 600—700 metres at that time. Asked whether this amount of drifting would be normal he was not sure. He was not sure whether such drifting had occurred earlier. Asked whether they had routines for his being informed of such drifting as Offshore Installation Manager, he testified that he should be alerted by the towmaster if anything abnormal occurs. Asked whether the marine representative should have been informed, he replied that it was the same person [as the towmaster]. He had not experienced the double role as being problematical. Asked whether he had problems with not being given information, he replied that it was a very broad question, but that it may have happened. He testified further that when he comes on duty, he does not read the log line by line. Asked how often he was in the pilot house, he replied that it is just next to his office and that he goes there as a matter of routine, but that it depends on the situation. He has no fixed schedule for when he is there.

Asked whether he knew what roles the vessels were to have, O'Malley replied that he did not know it, but that he knew what assignments a vessel had at a particular point in time. He testified further that the roles could be switched with regard to which anchors they are to recover and in which order. The Commission referred to a document that Captain Reiersen had signed off on, in which the "Bourbon Dolphin" is listed as Vessel C, and asked what purpose was served by the vessels switching roles along the way. He testified that all the vessels received a list on which they were classified as vessels A to D, and he thinks that the signature relates to the equipment they received. He probably received information about role changes along the way, but this is something that is usually discussed between towmaster and vessel captain. He was informed when the vessels went to the field about what equipment they had and that all the vessels had the capabilities to fill all the roles.

O'Malley testified further that the drilling operation was to commence when the last anchor had been deployed, but that no specific date for when this was to happen had been set. They had no pre-set date for the drilling in advance, but a tentative date was cited in the rig move procedures. Asked whether it was of no significance that page 5 of the procedures say that total time should be five days and eight hours, he testified that this was an estimate based on previous rig moves and only a tentative date. The time estimate is not something they look at carefully along the way. He testified further that the entire rig crew was on board during the

move, including those who were to drill. The service personnel they required to commence the drilling operation were thus already in place on 12 April.

The Commission stated that there was a stop in the operation between 4 and 6 April, and he testified that this was a joint decision between the vessels and the rig to stop the operation at that point. The weather on those days was worse than on 12 April.

On the 12 April significant wave height was between 2.5 and 3 metres and the wind increased gradually in the course of the day. He was once or twice in the pilot house after the "Dolphin" had begun to run out chain, but he did not remember noticing the drifting in the course of the day. He did not remember being in the pilot house at 14:00. Asked whether he was informed about any incidents prior to the accident, he replied in the negative. Nor was he informed of the near-collision. Asked whether he ought to have been informed about it, he replied that he should have been, as soon as possible. He is always available by phone, so it would have been a quick business to inform him. At the time of the incident he was sitting at his desk. Asked whether he made any visual observations of what happened, he testified that by coincidence he glanced out of the window of his office. From his position he could not see where the vessel was in relation to the line. Asked whether at any point in time he was informed about any problems in running-out anchor no. 2, O'Malley testified that he did not receive any information that made him concerned, as far as he could recall. If he had known that the vessel had been off-line for three hours, it would have aroused his interest. He did not know what bollard pull the "Dolphin" and the "Hercules" had. The vessels had to meet the minimum standards for bollard pull, and when they arrive at the location, he assumes that they are in compliance with the requirements. He does not check the detailed specifications of the vessel, he assumes that the towmaster, with his marine expertise, has taken account of this. Asked whether, after the accident, he had become more interested in what kind of bollard pull the vessels have, he testified that he does not have a marine background and therefore leaves it to the towmaster to evaluate this. He also stated that he had not been involved in any rig moves after the accident.

The Commission stated that the "Olympic Hercules" had a bollard pull of 280 tonnes, whereas the "Bourbon Dolphin" had a bollard pull of 194 tonnes, and O'Malley was asked whether he would have allowed the "Dolphin" to commence the assignment, taking into account the problems that the "Hercules" had and the fact that the "Dolphin" had less bollard pull. O'Malley testified that he relied on the evaluations that the towmaster made, and that he was not sure why the "Hercules" had drifted. He would perhaps have raised the question of running out anchor no. 2 with the towmaster and captains. Asked whether he would have considered suspending the assignment if he had been aware that the "Dolphin" had begun to drift after 14:00, he replied that it was something that could have been discussed. Asked whether, against the background of the experiences with deployment of anchor no. 6, he ought to have been kept informed that the "Dolphin" had drifted so far from the line, O'Malley replied that he should have been informed about it. Asked whether he had made any observations of drifting or asked questions about it, O'Malley replied in the negative. Asked whether he was aware of when they would get finished with the deployment of the anchor, O'Malley replied that he expected that they would be finished with the anchor in the afternoon, but he himself did not take the initiative to discover when this would happen and how the process was going. He testified further that communication between the towmaster and himself depended rather on who was towmaster, but that they had had a morning meeting that day and that it went as planned. He could not recall any particular atmosphere in the pilot house the day of the accident.

Asked about what communication he had with the shoreside office, he testified that they had a conference call in the morning and another conference call in the afternoon. These conversations contained an update of what was going on. The conference call in the afternoon usually takes place between 15:00 and 19:00. It is normally the shoreside office

that calls him. Asked why he did not keep up to date when he knew that he would be called in the afternoon, O'Malley testified that he believed at the time that he was updated about the situation. He would have said that things were going as planned and that they were ready to drill when the anchor was deployed.

Asked who keeps logs and what is to be written in them, he testified that Trident's towmasters keep a bridge log regarding the rig move. The ballast control operator keeps a "marine log". He himself also gets a running copy. The drillers have a daily operations log for their work; the drilling log and the departments' logs are entered into an electronic system and the marine log into a "diary". Trident's log is a paper copy that the rig usually gets a copy of after the rig move. He has access to the bridge log if he needs to read it.

The Commission then changed tack and asked him what he observed around 17:00. From his office he could see that the vessel was listing, and he then went to the bridge, where he had a conversation with Sapsford. He summoned the barge engineer [Sutherland] to the pilot house; Sutherland was engaged in maintenance work and came within one or two minutes. Shortly after his arrival on the bridge, the "Dolphin" capsized. O'Malley triggered the alarm immediately. From that point his duties were as on-scene commander of the emergency response.

There was a break in the testimony.

Asked who had alerted the rescue helicopters, he testified that there was communication between the rig's radio officer, David Duncan, and the Coastguard. When they arrived at the location, the helicopters communicated by radio with the rig. The Commission explained that two of the casualties were taken on board the rig and he was asked whether he knew their condition. In the first communication the helicopter said it would come with a casualty. The helicopter was informed that a medical team would come to the helideck to receive the casualty, but the helicopters said nothing about the condition in which they were. When they came aboard they were taken to the rig's hospital, and he still did not know their condition. He was then told by one of the rig personnel that there were fatalities. On the helideck was the helideck team, a crane team and medic Margaret Henderson, who received them. He does not know whether resuscitation attempts were made on the rig. He was then in the command centre, and did not know what medical measures were taken.

After the Commission was finished with its questions, Attorney Lund Mathisen asked whether there was equipment for measuring the tension on the rig, which O'Malley confirmed. There is a local display in the control room that is located next to the pilot house, but there is no display in the pilot house. He could not remember tension measurements from 12 April. He was shown survey data and asked whether the system showed heading, but he did not know whether that was so. Asked about the last time he was in the pilot house, he said he did not remember, but that it was at any rate more than 10 minutes before the capsizing. He was sitting in his office. He stood up and he saw "Dolphin" list. This was right after 17:00. He had the same view from his office as from the pilot house, and he had a view northwards. He could see the vessel from the starboard side of the rig. He did not remember how much the vessel was listing, but he thinks it was listing less than 45 degrees. He went straight to the pilot house. The "Dolphin" looked to be in the same position each time he looked out of the window. He did not see the vessel righting itself. The actual capsizing from 45 degrees happened very quickly. It took a couple of minutes from when he saw the first roll until capsizing occurred. He spoke with Sapsford between the rolls. From his position he could not see the cargo rail, nor water on the deck either. Asked by Lund Mathisen when he left the rig, he replied the afternoon of Sunday 15 April. He was involved in discussions whether to cut the chain, and the chain was cut before he left the rig. It was SOSREP who took the final decision to cut the chain. Asked by Lund Mathisen who asked to cut, he was not sure, but there were a number of conversations about this. The reason why the chain was cut was the

potential risk to which it exposed the rig. Lund Mathisen stated that there was 1800 metres of chain and 1100 metres of water depth, and wondered whether there would not be enough chain not to damage the rig, which O'Malley confirmed. He also testified that the rig could have paid out wire if the vessel was about to sink.

To a question from Attorney Craig about how long he had been Offshore Installation Manager on the "Rather", O'Malley replied two years. He had been involved in several rig moves with the "Rather", including some in deep water. This was the deepest water he had worked with. Asked by Craig whether the drill site manager had been present at the meeting of 28 March, he replied in the affirmative, and that the barge supervisor was also present. Asked by Craig whether the double role of tow master and marine representative could create problems, O'Malley testified that it did not create any problems. He testified further that the two men who were barge supervisor and ballast control operator had marine backgrounds, in addition to the two towmasters. Craig asked further whether there was ever any pressure to get finished with a rig move. O'Malley replied that there was not, and that a rig move takes as long a time as is necessary. He testified further that there were no significant differences between this rig move and other rig moves. Asked by Craig who could see whether the weather conditions were defensible, he testified that the masters, the towmasters and he himself could do that, and that there were thus several people who could have suspended the operation on grounds of weather. He testified further that he had suspended operations before, without hesitating. Craig also referred to the fact that O'Malley mentioned "the company man" and O'Malley confirmed that this was the same person as the drill site manager. He looked out of the window by chance.

Attorney Jamieson referred to his previous testimony, that he had not been told that the "Dolphin" was off line, and asked him to amplify this. O'Malley testified that he could not remember it, but he cannot rule out that this was said. He would not expect to be informed every time a vessel was off line. Also other people would have been able to inform him. He would not have stopped a job merely because a vessel was off line, but would have discussed it with the towmaster. Whether it would be possible to stop the job depends on the conditions. Asked by Craig whether it was coincidence that he looked out of the window when he saw the vessel rolling, O'Malley answered in the affirmative.

Asked by Attorney Jamieson whether he was not told that the "Dolphin" was off bearing or whether he does not remember being told, he replied that he does not remember being told, but cannot rule out that it happened. He testified further that he did not expect to be told every time a vessel drifted. He testified that if he had known that the vessel was so far off course, he would have discussed the situation with the towmasters and the master of the vessel. Asked by Jamieson whether it would have been possible to stop the job, he replied that it depended on the situation.

Attorney With referred to the fact that he had testified earlier that he was the senior manager of the operation and that "casualties" were taken on board, and asked who the medical personnel were. He replied that this was the rig's medic, and that there were also other people on board trained in first aid. The Medic is a nurse. Asked by With who, under current legislation, can declare a person dead, he replied that it was the Medic. Asked further whether he was aware of Transocean's emergency log, as referred to in the presentation prepared by Chevron, Transocean and Trident on 11 September, he replied that this was a log that was used in emergencies. In a time column in this log it says 18:56 "confirmed fatalities". This information was relayed from the Medic when there were no longer vital signs. With also referred to what he had testified earlier, that he saw no resuscitation, and asked whether he had subsequently received any information about this, which he had not.

In conclusion, O'Malley expressed his condolences to the family and friends who were present.

- **Witness No. 10 took the stand:**

Name: James Alexander Sutherland
Date of birth: 7 January 1964
Post: Barge Supervisor, Transocean
Address: Buckie, Scotland

Sutherland testified that he joined the merchant marine when he finished his education, and stayed there three years- - with Ben Line. in Edinburgh. He then started offshore, where he has been working for 23 years. Sutherland testified that he had been barge supervisor for twelve years, of which the last two on the "Transocean Rather". He had worked both in deep and medium deep water previously. The post of barge supervisor involves the responsibility for the stability of the rig, loading and unloading operations, plus maintenance of all rescue equipment on board. Sutherland testified that he came on board while they were still working with the first anchor. He seems to remember that it was 26 March.

He was shown Chapter 2.0 of the rig move procedures in which personal responsibilities are dealt with. Sutherland testified that the barge supervisor reports to the Offshore Installation Manager. Asked whether he participated in the planning of the rig moves, Sutherland testified that he received a draft of the rig move procedures. He went formally through the procedures and highlighted mistakes and things that could be improved, and his comments were taken into account. Most of his comments concerned the weights which would be imposed on the rig's winches. He had no comments on the vessels. All had requirements for 180 tonnes of bollard pull, and he was not worried about them. He saw the final procedures when he came on board, and the first thing he did when he came on board was to master them.

Asked whether he had any contact with the towmaster, he replied that it was natural, since he operated the winches and they talk together with people on shoreside if changes are made. He testified further that contact with the towmaster was daily. They talk about the weather, the next operation etc., and they work as a team. He also stated that his office was in the pilot house, although he needs to spend much of his time elsewhere in the various winch houses, in the rig's legs and on deck. Asked whether he was aware that towmaster and marine representative was a double role, he replied in the affirmative, and said that it was entirely normal that one and the same individual acted both for the rig and for the operator.

Asked to what extent his comments on the winch loading in the draft rig move procedures had been addressed, Sutherland answered that he had noticed that the angle of the fairleader had changed slightly. He testified further that the dynamic loading that the winches on the "Transocean Rather" can withstand was 200 tonnes, but he was not sure how much it was in static load.

He was then asked how long time it took to deploy an anchor. Sutherland testified that it took the rig about 15 minutes to run out the chain and 20 minutes to run out wire. He was shown the overview of winch tension on page 7 and was asked how much tension there was at that point in time, but Sutherland did not notice what tension they then had on the winch. He saw, however, the tension when they were running out chain, and it was then 50 to 60 tonnes. He was shown a document containing a survey of winch no. 2 from the 12th of April, but Sutherland said that he had not seen that curve before. Asked how long time they expected the running out of chain on anchor no. 2 would take, he replied that it would take about six hours from when the PCP [pennant wire] was handed over until the anchor was on the seabed. He testified further that the weather window for anchor no. 2 was the same as for no. 6, between 12 and 18 hours. The weather conditions had been up and down. The two anchors were to be deployed more or less simultaneously, and the weather forecast said 3

metres significant wave height. The weather forecast warned of a maximum wave height of 4 metres, while a wind strength of 30 knots was predicted. Asked whether any analyses had been made of what forces would be exerted on the rig's winches under the weather conditions predicted for 12 April, he replied in the negative. The winches were in static mode. He knows that the chain goes out with tension of 60-80 tonnes and wire with tension of 80-120 tonnes. He knew what tension they had on the rig, but not what tension they would have on the vessels. Asked how he could explain the suggestion that there was a tension on winch no. 2 of 180 tonnes, Sutherland answered that this was not the case since the Safe Working Load (SWL) for the winch in the transition between running-out of chain and wire was only 100 tonnes. When they run out the chain it is under 100 tonnes.

Sutherland was then asked about HAZID/HAZOP and whether he was involved in the risk analyses that underlay or were evaluated in connection with the procedures. Sutherland testified that he was not involved in the preparation of risk assessments, but that he was aware of the documentary material that underlay the risk assessments. A full mooring analysis had been made, weights had been calculated, and vessels chosen on the basis of these calculations. He testified further that all the information he had about risk assessments for the rig move was contained in the rig move procedures.

Asked about his role during rig moves, Sutherland testified that he ensures that the machinery is operational and that he has sufficient people in the right position to operate cranes and winches – deck crew, crane operators and winch operators. He testified further that during the running out of anchors he was the one who ran out the anchor from the winch. When anchor no. 2 was run out he was first on deck, and then communicated with the "Bourbon Dolphin" and organised the deck crew. Once pennant wire was passed to the "Dolphin" he went to the pilot house and talked to the "Dolphin" about the procedure ahead and how much chain would be going out. Sutherland testified that when he ran out chain it normally goes out at about 100 metres per minute, and when he comes to the end of the chain he informs all the vessels and asks them to ease back on the power so that he can sink the chain into the hook in uncoupling. The weight must be below 100 tonnes when the chain is to be fastened in the hook for the transition from chain to wire. His job was then to connect the wire to the chain. The chain was then released from the hook and the wire paid out over the lower fairleader and came between the rig bolster and the fairlead. The winch brake was then applied. He then called up the "Dolphin" and said that he had completed the changeover to wire, and after that he contacted the towmaster to inform him that the job had been done.

Sutherland testified that after this he went back to the pilot house in order to see how it was going with the run-out of anchor no. 6. They were then ready to run out wire on anchor no. 6. He was shown p. 21 of the log and confirmed that the time entered for run-out of wire to anchor no. 6 was correct. The log was, by the way, Trident's log, kept by the towmasters. After anchor no. 6 was finished he went and looked at how the deck crew and a paint crew were getting on, and made sure they were doing what they should. He then returned to the pilot house in order to see how it was going with mooring line no. 2.

He testified further that he spent a good deal of time there and that he worked in a twelve-hour watch system that began at 07:00 and was finished at 19:00. After 14:00 he worked with some problems they had with the ballast system. The operator had problems with a valve. This work took place two decks below the pilot house. Periodically he was popping up to the pilot house.

Asked what weather conditions they envisaged during the operation, he testified that they expected three metres significant wave height and 30 knots wind in the next 24 hours. He testified further that there was no current meter on the rig, so that he could say nothing about

the current conditions. He did not recall that there were any discussions with the vessels concerning the current conditions on 12 April.

Asked whether he had been present at a meeting about the rig move procedures, Sutherland answered that he could not recall having participated in any meeting. He was not particularly focussed on weather criteria, but he was aware of the four-metre wave height and the conditions for halting operations. He testified that there was a criterion in the rig move procedures for a maximum of four metres wave height.

He stated further that he had not participated in the rig moves from Invergordon to Location G. He testified further that he had participated in wash-up meetings, at which they usually discussed questions of rig equipment how it was used, wear and tear on the winches and so forth. He also raises questions about forces if they have damaged the winch brake. In general, the more brake applied, the more wear on the winch brake. Sutherland also testified that he was not aware of any changes in this move relative to the move to Location G.

The Commission referred to the fact that Sutherland was the highest-ranking member of the rig crew on board with a marine background and that he ought therefore to have good insight into weather-related conditions. The Commission then referred to comments from other witnesses who had pointed out that the weather conditions had been marginal that day, and asked Sutherland whether there could be unidentified current forces in play on 12 April. He replied that they do not work under marginal weather conditions. He nevertheless confirmed that if you work under marginal weather conditions and in addition you encounter unknown current forces, you will consider suspending the operation. In this case there was no consideration of suspending on grounds of bad weather. If he had received information that the current was stronger than expected, they could have considered whether to interrupt the operation.

Sutherland was then asked whether he was on duty when the wire was fed out to the "Olympic Hercules" on anchor no. 6. The Commission referred to the fact that the "Hercules" was 600 metres off line, which Sutherland perceived as a material course deviation, but from his position he could not observe that they were that far off line. He remembered that he had overheard a conversation between the towmaster and the master of the "Olympic Hercules" in which the master said that as soon as the wire was starting to pay out, he was 99.9 % sure that he would get back on line. Asked whether he was aware of the vessels' bollard pull, Sutherland answered that he knew only that they had at least 180 tonnes, but nothing more specific.

The Commission referred to the fact that the "Dolphin" commenced run-out of extension chain at 12:53 and asked whether Sutherland had been present in the pilot house after that. To this he testified that he came and went and that he was waiting for the chain to be paid out so that he could run out wire. Asked when he discovered that the "Dolphin" was off-line, he replied that he did not discover this until after the pennant wire for anchor no. 6 was handed over. This was a little after 14:00. Between 13:00 and 17:00 he was in the pilot house around four times. Present in the pilot house were the two towmasters Harvey Wilks and John Sapsford, and the navigation engineer Martin Troup. Offshore Installation Manager Patrick O'Malley was in and out of the pilot house, as he usually was.

Asked whether Sutherland was aware that the "Highland Valour" was to start grappling, Sutherland answered that he was in the pilot house at that time. He testified further that such a grappling had been done with the "Vidar Viking" so as to relieve the pressure on the winch in order to prevent the chain jumping on the gypsy. To the question whether the reason for having the "Highland Valour" grapple was the chain was jumping on the gypsy on the "Dolphin", he replied that it was, but that the "Valour" was deployed in order to take the weight off the chain. He testified further that there was no communication with the pilot house

regarding the problems on the “Dolphin”. The intention was that, after the “Valour” had gotten hold of the chain, the “Dolphin” was to continue paying out chain smoothly. Asked whether he had any thoughts about why the chain was jumping on the gypsy, he replied that it was probably because of the weight of the chain. They did not ask the vessels what forces they had registered, nor did they measure tension on the rig.

Sutherland also testified that when the chain had been run out at 14:45, the object of the grappling attempt was to help the vessel get back on line. He left the bridge after this, however, but noted that it took almost two hours to grapple the chain. The next observation he made was that the “Dolphin” was getting very close to no. 3 mooring wire, which became a concern for him looking after the assets of the rig and he informed Offshore Installation Manager O’Malley about this. He could not remember the time. He could not recall whether he was in the pilot house when the “Valour” got hold of the chain. Nor was he aware of the near-collision until he was interviewed in town and was shown photographs of the situation.

Asked whether he saw the capsizing, he testified that he was working two decks below when the Offshore Installation Manager asked him to come to the pilot house immediately. On arriving, he looked out of the window on the starboard side and he could see that the vessel was rolling, and then back upright. He then shouted to the towmasters that the “Dolphin” had to let go all the chain, but then the vessel rolled completely over. The towmaster then called the vessel without getting any reply.

Asked whether he heard any communication from the towmaster to the “Dolphin” as to how they were to get the vessel back on line, Sutherland answered that the last time he was in the pilot house prior to the capsizing, he could see that the “Dolphin” was beginning to work herself westwards towards the line of anchor no. 2. The only communication he heard between the vessel and the rig was that they had to get themselves west. Asked whether there was a halt in the operation on account of poor current conditions, he replied in the negative. As regards the problems that the “Olympic Hercules” had with anchor no. 6, Sutherland did not have any explanation of why they drifted to such an extent, and the master of the “Hercules” did not mention anything about current conditions, not that he overheard. The captain of the “Hercules” was 99.9% certain that he could get the vessel back on line.

He was then asked if he knew whether the “Dolphin” had run out all the extension chain, and replied that he was not aware of it. He was aware that they were not going to run the anchor until later. The Commission then referred to what he had testified earlier, that a similar grappling had been performed by the “Vidar Viking”, and asked him to amplify this. Sutherland then testified that it was on anchor no. 7, but that he would have to look in the log. Asked whether he remembered that the “Vidar Viking” was in this case the assisting vessel, Sutherland testified that as far as he was aware, all vessels were main vessels and that he could not distinguish between main and assisting vessels. The Commission referred to the fact that the “Viking” was helping the “Dolphin” to deploy anchor no. 3 and the “Hercules” on anchor no. 6, and asked whether he remembered whether the situation to which he referred concerned anchor no. 3 or no. 6. He testified to this that several of the vessels had problems with the chain jumping on the gypsy.

The Commission asked whether it was normal for a vessel to get so far off line as 600 metres, as the case was with the “Olympic Hercules”. To this Sutherland testified that he had never seen such a large drift. Asked whether they ought not to have taken a break before continuing the operation, Sutherland testified that he never realised that they were so far off line. Nor was he aware of what capacity the “Dolphin” had in comparison with the “Hercules”. In conclusion, he was asked whether he could remember at what time he informed O’Malley about the problems with the “Dolphin” drifting, but he replied that he could not recall.

After the Commission was finished with its questions, Attorney Lund Mathisen asked who had said that the assistance by the "Highland Valour" had been requested because the chain was jumping on the gypsy. To this he replied that it was the vessel that had informed them about this problem. Sutherland was then shown p. 18 of the towmaster's log in which there was a comment to the 11th of April at 11:44 AM related to anchor no. 3, in which it was written "too much weight on chain" and the "Vidar Viking" was then asked to grapple. To this Sutherland confirmed that he may have mixed up the two anchors and that it might have been anchor no. 3 and not no. 2 where the chain was jumping on the gypsy.

To further questions from Lund Mathisen as to whether he could describe the list to port, Sutherland testified that the superstructure was in the water up to about where the MOB boat was placed. The vessel listed only for a few seconds before it righted itself, and then only a few seconds elapsed before it flipped clean over, and that the capsizing happened rapidly. He could not see how much water there was on the main deck, nor did he observe whether the vessel was trimmed forward. To further questions from Lund Mathisen as to whether he was consulted about running out wire to the Dolphin prior to the accident, he replied in the negative. He testified that he could have run out wire. It was winch no. 2 that was used, and that there were no problems with the winch during the operation. Lund Mathisen then asked whether the current meter was operative at this point, and Sutherland testified that it was not, since it had been recovered aboard the rig for the rig move. He also testified that he left the rig on Sunday 15 April and that he participated in discussions about cutting the chain to the "Dolphin" with the towmaster and the Offshore Installation Manager. He did not know, however, why the chain was cut and who took that decision.

Attorney Craig asked whether Sutherland was aware how much the "Olympic Hercules" was drifting when it occurred. Sutherland testified that he was not aware and that he did not become aware of it until after the anchor had been run out. In response to further questions about how much time he spent in the pilot house, Sutherland answered that he was not very much there. Craig then asked whether he previously experienced the functions of towmaster and marine representative being discharged by the same person, and Sutherland testified that this was quite normal, and that it was an arrangement that functioned well. Craig then asked about tension on the winches in accordance with the curves. He testified that in normal run-out of chain there was about 75 tonnes tension, and after the extra chain length of 900 metres was added, there was a weight increase. He testified also that they expected a maximum of that 160 tonnes of tension in deployment of the anchor and that the grappling boat should at this point be deployed to take a share of the weight. Attorney Craig then asked about Sutherland's assessment of the near-collision, and he then replied that he was shocked when he saw the photographs of the vessels. Sutherland had talked with the master of the "Dolphin" when the vessel came up to the rig in order to get the pennant wire. He had expected that the vessel had the same level on draft, if not lighter. But on the photographs from the near-collision he saw the vessel's name and home port deep in the water, that is, deeper than earlier that day, which can suggest that more ballast was taken on in the course of the day.

He testified that there was a stability program coupled with controls for tank sensors and draught marks. There was calibration equipment on board and the winches were calibrated and set at a certain load when the chain was run out and they have deployed wire. The winches were thus newly calibrated on 12 April. The Commission then asked whether Sutherland had been consulted by Sapsford whether it would be advisable to pay out wire to the Dolphin in the period prior to the accident, and referred to the fact that Sapsford had testified on the previous day before the Commission that it was not advisable for the sake of the winches on the rig. Sutherland then testified that it would have been doable, but that it was not a part of the procedure. And there was never one communication to the rig that the "Dolphin" was in difficulties.

Attorney Jamieson then asked what kind of load the winches would have in any run-out of wire to the "Dolphin", but Sutherland replied that, without knowing the precise time that the request was made, he would not be able to know what sort of load it would put on the winches. If wire had been paid out without there being grappling at the other end, it would inevitably have inflicted damage to the wire and the rig.

The Commission then referred to what he had recently testified about his inability to calculate forces on the winches, and he confirmed that they had no program that could have calculated the forces nor the catenaries but that the towmasters would have this information.

In conclusion, Sutherland expressed his condolences to the family and friends.