

Bourbon Dolphin: Public Hearings Process

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

- **Witness No. 1 took the stand:**

Name: Richard James Thornton Macklin
Date of birth: 5 April 1951
Address: Aberdeen, Scotland
Post: Chevron Upstream Europe

Macklin stated that he had worked five years in the merchant navy. He began work as First Officer on anchor-handling vessels in 1973 and was promoted to master in 1974. He was on anchor-handling vessels until 1983. He then started on semi-submersible drilling rigs. First he worked a year as Control Room Operator, then as Offshore Installation Manager, which post he held for about eight years. He then worked ashore as Marine Superintendent. Then he worked for Texaco, which later merged with Chevron. He had worked 11 years in the post he now occupies; his job designation is Marine HE&S Specialist. He had worked with Transocean before, with Transocean rigs contracted by Chevron almost continually for the last five years. He has also worked with Trident, who is Chevron's marine services contractor, a position they have held in all the 11 years in which Macklin has been working in his present post. He was also working with Trident when he was Offshore Installation Manager. Altogether he has worked with Trident for about 20 years. To questions from the Commission as to whether he had worked with any of the vessels that participated in the operation in question earlier, Macklin testified that he was accustomed to go aboard the vessels before they leave port and when they come back from an assignment. He stated that he had worked with vessels from Bourbon previously, inter alia he had worked with "Bourbon Surf" in two rig moves. He visited two of the anchor-handling vessels before the operation began. [The "Vidar Viking" and the "Highland Valour".]

Macklin's situation with Chevron is actually two posts: he was both marine specialist and HE&S specialist for the Drilling Department. For this particular rig move he was acting in the role of Marine Specialist rather than HES adviser. Originally the job was split 60/40, but there is steadily more work to do on the marine side of the job. He was not involved in contractual matters. Asked by the Commission whether he was involved in the planning of the rig move, Macklin testified that in November 2004 he and the engineering manager visited the "Transocean Rather" in Invergordon in order to see whether the rig was suitable for Chevron's operation west of Shetland. At that time Chevron did not have a contract with Transocean. The rig went to work for British Petroleum (BP) in the first half of 2005 and Macklin visited the rig offshore once in the course of the first quarter of 2005. Macklin confirmed that he did not get involved with contractual issues. Not long afterwards Chevron concluded that the rig could be suitable for the purpose if it satisfied the mooring analysis requirements. Trident was then asked to undertake a provisional mooring analysis in order to see what extra mooring equipment was necessary to safely moor the rig in the water depths in the three locations in the Rosebank field, and this was done. The preliminary analysis indicated that additional chain would be necessary to meet the POSMOOR requirements. At the same time Transocean performed a mooring analysis just to make sure. Obviously they needed to be 100% certain of their facts when it comes to mooring analyses so Transocean also carried out a mooring analysis. They then sourced the extra chain length they were to obtain and whether such chain was available. Taking the components from the mooring analysis and the equipment they needed for the job, in January or February 2006 they drew

up a list of vessels that could be suitable for and relevant to the job at that time. Asked who had taken part in this planning, Macklin replied that it was Chevron, Transocean and Trident. From that stage the shipbroker followed the market and updated the list of potential vessels as and when required. As new ships came out or ships left the North Sea to go and work in other parts of the world, so as the time got closer to the first rig move operation, that list was readily available to know which ships were capable of carrying out this work. The first rig move was performed in October 2006, from Invergordon to Location G. Asked by the Commission who was duty holder, Macklin replied that it was Transocean, whereas Chevron had the licence for the Rosebank field.

Macklin was shown the rig move procedures page 2, where his signature stood under "approved". The plan is common property between Chevron, Transocean and Trident. Trident are the experts in this field. Chevron itself does not have the in-house naval architect capability and other expertise required to create complete rig move procedures, and therefore uses Trident. The technical input comes from the Marine Services provider. On page 6 of the plan the function Chevron Drill Site Manager is described. Macklin explained that this was an offshore position held by one individual who works days and another who works nights. It is not a marine post but he is out there to look after Chevron's interests on the duty holder's installation, and the Senior Drill Site Manager in the daytime was Mike Hollinshead.

In section 2.3 of the plan the function "Transocean towmaster" is described and Macklin testified that British legislation demands that Transocean have marine personnel on board. Some drilling companies already have marine people permanently on board and its not an issue. Since Transocean does not have a marine person in its regular workforce, they must have two persons who are designated as towmaster working for 24 hour coverage to cover that role during rig move operations. It was Trident who provided the towmasters, but this was very much a joint decision. All decisions concerning the plan were taken collectively by the three parties. The towmasters are to follow the instructions contained in the rig move procedures and the plan may not be deviated from unless all three parties are agreed. In this move changes were made, and then always after a conference call between the parties to make sure they were all involved in the decision making. Asked whether there were other instructions that had to be followed, Macklin testified that there existed both a Chevron Marine Manual and a "Transocean Rather" Manual that the towmasters also had to follow.

Section 2.4 of the plan describes the Chevron Marine Representative. This was a joint role between the Transocean towmaster and the Chevron marine representative. In Macklin's opinion it is good solution that the same person performs both functions. The towmaster is there to safeguard Transocean's interests and fulfil their requirements, whereas Chevron's marine representative is there to safeguard Chevron's interests. The Marine Rep. is to advise the Drill Site Manager, who is Chevron's senior representative on board, and to communicate with shore. Asked by the Commission whether four persons would be too many, Macklin replied in the affirmative. It is not advantageous to have four mariners. Macklin also emphasised that it was a joint operation in which Chevron and Transocean held conversations in the morning and in the afternoon. It was therefore not expedient to split the functions of marine representative and towmaster into two posts.

Macklin was asked whether he was involved in technical solutions regarding the mooring system in 2005. He testified that the mooring analysis ruled out the possibility of using insert wires or fibre ropes because of the strength requirements that were necessary, and so the option in the mooring analysis was to use additional chain instead. They were originally to have begun in March 2006, but there were delays with Shell and BP who was the previous operator for whom the rig had worked which ended up pushing the start date back very much later on in the year and Chevron therefore had to look for an all year-round mooring system.

Macklin also testified that there were different requirements depending on when in the year a rig was to be moved.

When they knew how much chain they needed, they approached International Mooring Systems to source suitable chain and to make sure it was going to be ready at the required start time. They rented chain from them. A mooring component is not our core business. After the mooring analysis they looked at methods for deployment and recovery of anchors. In this connection the naval architect at Trident performed calculations of various load share arrangements. Macklin did not remember exactly when the first analysis was performed, but it must have been long before the first rig move in October 2006. The Commission asked whether pre-lay systems, which are normal and a better solution safetywise, were considered. Macklin disagreed with the assumptions behind the Commission's question: he considered that we are in an early phase of the use of pre-lay systems at that kind of water depth in this part of the world, and did not agree that it was a normal solution. To say it is normal is probably misleading. He disagreed that pre-lay was a better system. Pre-lay systems were discussed at a meeting after the first rig move. They had a "wash-up meeting" after Shell had been at Benbecula Location with Transocean Rather where they had installed a pre-lay mooring system. Shell had had major problems there, in which Transocean and Trident had also been involved. After listening to all the extensive problems that occurred during the Shell rig move, they decided that pre-lay was not the way to go. The problems at Benbecula were that two of the subsurface buoys had come loose before the rig arrived, and when they went to recover the mooring it took close on 21 days, and that under good weather conditions.

Macklin was asked to describe the company's HSE policy, particularly Chapter 1. 3.1, which was shown him. Macklin testified that whole planning process for a rig move operation was a risk assessment. This was meticulously planned all the way from November 2004 when they inspected the rig in Invergordon and offshore, through the performance of the mooring analyses, where loading was highlighted – all this was incorporated into the procedure and managed and built into planning and execution phase of the rig move. The Commission referred to Section 1.3.4 which describes the functions of the management. Macklin testified that the rig move procedures were based on Chevron's Marine Operations Manual which provides the ground rules. Asked by the Commission whether the rig move procedure covered the entire risk picture in a rig move, he testified that risks were taken into account throughout the process and the whole risk assessment process is all part of the forward planning and that all vessels undertake their risk assessment process and are briefed extensively before the operation starts. In addition, the rig performs its own risk assessment process. The vessels then arrive on location and, before the operation is commenced, there is a conference call between the vessels and the key personnel on the rig, at which hazard factors are reviewed. That again goes over the whole process and pulls together all these different risk assessment processes which each has in their own right and then all parties can come with concerns about the procedures to voice them immediately prior to starting the operation. In general there is a lot of planning behind every rig move. He himself has been involved in more than 100 rig moves for Chevron and more than 200 rig moves in his entire career. In this case the planning was even more meticulous than usual because the operation was to be performed in deep water. The planning process identified what capabilities and equipment each individual vessel had to have in order to participate in the operation and be able to carry out the job safely. The mooring analysis, the rig move procedure, the stage methodology for deployment recovery, identification of each particular stage; what weights would be involved, what forces would be involved. That was all clearly identified. In the light of this, a list of the relevant vessels was made. By saying these are the minimum requirements the vessels must have to be able to safely meet this operation. Asked whether risk analyses were collected from the vessels, Macklin said that he himself did not have such documentation and otherwise referred to what he had said earlier about looking at risk throughout the whole process.

Chevron's marine operations manual section 1.3.6 was shown him and he was asked to explain the content. It is stated there that when Chevron knows that a rig is coming on to contract or they are moving a rig, it is his responsibility to ensure that all processes are taken care of. He then approaches Trident and asks for example whether it is necessary to prepare a mooring analysis and a detailed procedure is eventually created. That is what kicks the whole process off. The Commission referred to the text of section 1.3.6 about making sure that "any risk that may exist has been evaluated". Macklin testified that all known risks had been evaluated, but it was not a foreseeable risk that the "Bourbon Dolphin" could capsize in his experience. Asked whether Chevron had a system for checking that risk analyses were performed on the vessels, Macklin testified that that was an offshore function, so he could not answer it. They had the conference call with the crew and the vessels were asked to fax p or e-mail up to the rig their tool-box talk that was held on board the vessels to make sure everyone was aware of what their job was and what safeguards would have to be put in place. He testified further that if the vessels say that the risk analyses have been done, this is accepted. So much has to be taken at face value. They are totally remote from the vessel. If they say it has been done they have nobody on board the vessel that can actually verify that. At the briefing the operation and risk assessments are reviewed. Everything is explained to the vessels and the procedure contains all the necessary information, which the vessels can use so the information is readily available. The Commission asked whether Chevron's marine representative could have a responsibility for ensuring that risk assessments are performed on vessels. Macklin testified that this representative is an experienced person who will give him information about what happens offshore. The marine representative has a clear role, and Macklin sees no problem with one and the same person being both towmaster and marine representative.

Asked who participated in the joint conference call he mentioned earlier in his testimony, Macklin replied that it was held with each individual vessel since they were not assembled in Aberdeen at any point and may not arrive at the same time, and his expectation was that such a conference call was held after every crew change. The conference call would normally include the Offshore Installation Manager, the barge supervisor and the drill site manager. He does not know who took part since he himself was not present.

Macklin was shown an overview of the three revisions of the rig move procedure and asked what were the main differences between them. He testified that the original plan was for the first well to be concluded at the end of January 2006, but Macklin expressed concern that they would be exposed to poor weather conditions at that time of the year. After having consulted with the other partners, they decided to create a "sidetrack" in order to acquire further information, so that they could delay the rig move until the spring. That was the reason for the revised procedures. You do not just take the procedures off the shelf. They are always being revisited and brought up to date. The revision criteria were not different, but things change, inter alia the vessels to be used, and procedures are correspondingly updated. The main difference between the rig move procedures for Location I and the one used for Location G was anchor recovery. At Location G, only anchor deployment was relevant, whereas anchors were to be both recovered and deployed at Location I. They encountered problems with the winch brakes on the rig on the first rig move and, as a result, at the G. Location they had to use a two-boat method to deploy each of the anchors. A major change was that at Location I they decided to use not four but five vessels, of which one would be used as a pure tugging vessel.

Asked how long the rig move was supposed to take, Macklin replied that it would take at least 14 days. Suspensions of the operation due to bad weather were not included in this time estimate. They had not made any estimate of how long the operation could be suspended due to the weather conditions. The vessels were chartered on a daily basis for the time it took to move the rig, regardless of whether it took two or four weeks. Macklin was

asked about independent forecasting and testified that there are two independent weather forecasts received on the rig each day. They start the operation when involved parties consider the weather conditions are defensible and everyone involved in the operation can halt it if they are not comfortable with the weather conditions, which is also normal in a rig move.

The Commission referred to p. 39 of the rig move procedures, where the word “contingency” appears, and Macklin was asked whether the plan also covered non-conformances on the vessels. He testified that what was written there applied to both the vessels and the rig. He testified further that when one looks at the non-conformances listed, they are vessels that perform all operations, so that the non-conformances cover them as well. Asked what was the planned time for recovery of each brest anchor, he replied that it was difficult to say, but it could be a realistic estimate that it would take around 18 hours, excluding suspensions of the operation due to bad weather. No weather restrictions had been stipulated for the operation, but they tell the anchor-handling vessel masters that they must not feel themselves pressured, and the vessels are always asked whether it is advisable to commence the operation. If there are new or inexperienced masters they always say that they must not feel themselves pressured even if other vessels think that the weather conditions are fine. If they do not think the weather is suitable, they must say so. The rig move can be divided into sections. The first weather window is when they are recovering the four secondary anchors. The next weather window is when they are to recover the primary anchors and move to the new location and deploy the four primary anchors. Once they begin on the four last anchors, they try to avoid having the rig in a position where it is not safe if the weather get bad. When the rig has been moved and they arrived at the next location, they deploy the four primary anchors and the rig is then secure. It is not then so dangerous if they must wait for two or three days to deploy the secondary anchors.

Macklin was shown sections 7.3 and 7.4 of the rig move procedures and the Commission stated that the recovery of anchors in stage 1 required 196 tonnes bollard pull. Static forces are 10.9 tonnes in head sea and 48.8 tonnes in lateral sea. Asked whether current on chain and wire is included in these calculations, Macklin replied that he was not a naval architect and could not answer the question as he did not wish to mislead the Commission. It was a questions better put to the naval architect. He was also asked how great the forces would be in a head sea when the static forces are included, but again stated that he did not have the necessary expertise to answer the question.

Asked whether Chevron as operator was responsible for all risks associated with the operation being identified so that they could be dealt with, Macklin replied that they had the responsibility for all operations being conducted in a safe manner and that safety was always given the highest priority. In his 34 years in the industry he has encountered Offshore Installation Managers both with and without marine backgrounds, and there are advantages and drawbacks of both kinds of background. In his opinion it is important that there is someone on the rig who has marine experience.

With regard to the choice of vessels Macklin testified that his role was to take the information he received from Trident, who keeps contact with the shipbroker, and give him a list of the relevant vessels capable of carrying out the operation. Chevron are participants in a company called Team Marine, who charters all the vessels. He nevertheless gives Team Marine guidelines in choice of vessel. The starting point is the information in the mooring analysis. One of his duties was to ensure that the chartered vessels satisfy the minimum specifications made of them on the basis of the mooring analysis. The process of choosing a vessel started with the shipbroker having conversations with Team Marine. When the rig move approaches, there is ever-increasing dialogue with broker. Now and then they have to charter vessels two weeks before the move so as to be sure that they are available. If they

can't get hold of vessels, they must postpone the rig move until suitable vessels are available.

He was shown pages 16 and 17 of the rig move procedures and asked whether each individual vessel had a specific role. Macklin testified that the vessels were divided into categories A to D. The reason for this classification was that Vessels A and B were to recover three anchors each, while Vessels C and D were only to recover and deploy one anchor each. All four of the vessels were to recover one primary anchor each. The rig was then to be moved and the vessels were then each to redeploy their primary anchor. Asked whether it was this that constituted the difference between primary and assisting vessel, Macklin replied in the affirmative. Asked whether the vessels that had recovered chain extensions and kept it were also to deploy anchors, he answered affirmatively, but it was not necessarily the same anchor they recovered, because all extension chains were equally long. To questions about what roles the "Olympic Hercules" and the "Bourbon Dolphin" played, Macklin replied that the "Hercules" was either A or B, whereas the "Dolphin" was either C or D. Macklin stated that the "Dolphin" should both recover and deploy at least one anchor and that the vessel satisfied the minimum requirements as to bollard pull, so that there were no limitations on the use of the vessel. Asked whether the "Dolphin" could also operate as an A or B Vessel, Macklin replied in the affirmative, but that it was better to use one of the vessels that had greater chain locker capacity.

The Commission referred to the fact that a minimum bollard pull of 180 tonnes was required, whereas 196 tonnes of bollard pull was needed merely to hold the chain (static load), and Macklin was asked to explain this. He referred again to the fact that he was not a naval architect and therefore could not answer the question. Nor could he answer the question whether the loads were static or dynamic. He could not answer this; he had to rely on the naval architects in Trident, who were hired to perform that part of the job. They are the experts and that is why Chevron contracted with them to do this work.

Asked when the "Bourbon Dolphin" was given a new role, Macklin replied that it occurred at quite an early point. Two of the vessels went out before the other two because winch repairs had to be performed on the rig. The two first vessels then recovered anchors nos. 6 and 2, which were diagonal anchors, whereas the others were recovered later. The Commission referred to e-mail dated 10 April in which it was stated that the "Dolphin" was to play the role of primary vessel. The e-mail was sent by Sapsford and approved by Macklin. He testified that all the vessels were told during the briefing and understood that their roles could be changed during the rig move. He received no information from the offshore personnel about the "Dolphin" having any objections to the change in roles. There were no communications from offshore personnel that this presented any problems for Bourbon Dolphin. Asked about the reasons for the choice of size of the vessels, Macklin testified that it was the mooring analysis that formed the basis for the choice of vessel. It gives all the information required including loads and bollard pull. From this information Trident draw up a list of potential vessels. Asked whether 180 tonnes bollard pull was sufficient, he replied that the naval architects had undertaken that calculation, and with his background he could not override their evaluations.

Macklin was asked about the internal QA/QC procedures. He testified that Trident creates a draft procedure; Macklin with his experience then goes through the draft and adjusts it as do the others who have signed the procedures, and they often have discussions and make changes to procedures. At the same time Trident has cutting-edge expertise in rig moves, so that to a large extent he relies on their recommendations. Asked whether Chevron had written procedures to quality-assure the rig move procedures, Macklin replied in the negative, but it was he who had the QA responsibility. When he goes through the draft procedure, he looks to see whether the safety aspects have been addressed and that safety is a number one priority both to the rig and the vessels. He uses his experience to consider what might go

wrong during the operation and asks himself what can go wrong, so as to take action to minimise the risks. He checks only the aspects of the plan for which he is qualified by his background.

Macklin testified that they were always learning. They have feedback, hold wash-up meetings, sometimes debrief the vessels, where they want feedback and look at factors that can make operations safer in the future. Getting feedback is all part of the ongoing process.

Macklin stated that he had been present at the wash-up meeting on 30 October 2006 right after the first rig move. Also present were, as far as he could recall, Sean Johnson (Trident), Rig Manager Adrian Brown (Transocean), one of the barge supervisors, Drilling Superintendent for the project Doug Mowat (Chevron), Ron Mathieson (Transocean) and the two towmasters. They had a conference call with the rig. The topic of the meeting was experiences after the October move, where there had been a few issues. Discussed at the meeting were inter alia deployment methodology and equipment that had to be repaired. The official post-rig move report had probably not yet arrived at that time but the information in the report is built in to the next rig move procedures. The main focus was that they always had to use two vessels to take the weight of the chain on the rig's side, which had not been part of the original plan. Another issue was the rig's permanent chaser collars, which had been fitted before the move. These could not be used on the next move and they had to make allowance for this in the next plan. There were other questions discussed, but the above-mentioned issues were the most important. Macklin has no minutes from the meeting, and he did not know whether Transocean had the minutes. The meeting was held in Transocean's premises.

After the accident with the "Dolphin" there was also a wash-up meeting. They had to hold a meeting immediately, inter alia because they had an anchor to deploy and to repair the mooring wires. Present were the same individuals as were at the first meeting, but with the addition of the master and chief officer of the "Olympic Hercules" and the master and chief officer on the "Highland Valour". They had to look at a new procedure for recovery of anchor no. 2, and received input from the masters and the chief officers. Stability was also one of the questions raised at the meeting, and questions were asked about how the vessels calculated stability, and how often they did so. Macklin did not know whether minutes were kept from this meeting.

Asked whether Chevron systematised experiences from rig moves, Macklin testified that they always used Trident and thereby had good continuity in the work that was done. The lessons learned from a rig move were used when they were to create new rig move procedures. These experiences were also contained in the post-rig move report for each operation which captures all relevant issues and lessons learnt. During the last move, in July, they began to collect data on load/tension etc., so that this was documented. The risk assessment process is 70 to 80 % generic, in the sense that it is the same kind of operations associated with a rig move. They did not, therefore, start out with a blank sheet every time they prepared a rig move procedures. And then there was a separate part that was specific to the move in question.

Stability is the responsibility of the shipping company, and not of the charterer. The responsibility to ensure that all known risks have been identified lies with the operator, testified Macklin.

Macklin testified that he participated in the briefing on the "Highland Valour", where also officers from the "Vidar Viking" were present. The meeting took place before they took equipment on board, and he thinks that it was one of the last days in March, before they left Aberdeen. Present at the meeting were, in addition to himself, Sean Johnson, the masters and chief officers, and key personnel from both vessels. At the meeting copies of the rig

move procedures and anchor plan were distributed. Johnson reviewed the pertinent parts of the procedure and spelling out exactly what was involved in the operation, plus key parts of the plan. He thinks the meeting lasted in the region of 1½ hours. The rig move procedure was in the spotlight and the details of the procedure were reviewed during the meeting and questions from the crew answered. Asked whether risks were reviewed at the meeting, Macklin replied that details of the plan were reviewed, inter alia paying out the extension chain and overboarding the anchors, use of assistant vessels with a grapnel, the reason why they had a second vessel to grapnel because the load would be too heavy, so that risks were discussed. Asked whether safety barriers such as bollard pull were reviewed, he testified that both they and the vessels knew how big the bollard pull on the vessels was. Weather restrictions were not in the plan because these were something that had to be evaluated in concrete terms on site and it would be wrong to specify wind and wave criteria in a rig move procedures. It is wrong to start to specify actual windspeeds and sea heights as, at the end of the day, it has to be an on-site decision on that day by the people involved. They would all have been asked earlier if they thought the conditions were suitable at the start. He explained this as follows: if, for example, there is a restriction of two metres wave height, conditions with a 1.5 metre wave height may nevertheless be sufficient to militate against the operation commencing, and then it can be undesirable for specific weather criteria to be enshrined in the plan. It is therefore safer to undertake a concrete evaluation of the weather conditions on the spot prior to the commencement of the individual operation.

Asked whether they received risk analyses from the vessels, Macklin testified that they went through a check list at the briefing, at which they inter alia checked whether the vessels have routines for tool-box talk. He also stated that he did not see any risk assessments from the vessels, nor did he ask for them. Macklin testified further that the “Highland Valour” was designated as Vessel B while the “Vidar Viking” was Vessel D, but they were told that changes might be made. Even if they were assigned a role, at the briefing they were told that the roles might change. The Commission stated that during previous witness testimony it was said that they ought to “expect the unknown”, and Macklin asked the questioner to amplify what the questioner meant by this. He replied that he was unsure what was meant by “unknown”; he testified that everyone knew that it was difficult to follow procedure precisely, and that the whole thing is a process of change, but he agreed that a procedure should describe what can be expected during an operation.

Asked how big was the operational bollard pull of the “Bourbon Dolphin”, Macklin replied that all vessels experience a reduction in bollard pull, and that the size of the reduction will vary from vessel to vessel. The “Dolphin”, was marketed to use as a deep water anchor handling vessel and cited to have a bollard pull of 194 tonnes and they have taken that at face value. In Macklin’s opinion any slight reduction would not mean that the operation would be endangered and it certainly is not going to cause the vessel to capsize. The Commission referred to the testimony of First Engineering Officer Morten Reite that the “Dolphin” would have experienced a reduction of about 30 % in bollard pull during full use of thrusters.

Macklin was asked whether Chevron had any responsibility for ensuring that all the participants in the operation, including the vessels, had performed a risk assessment. Macklin replied that a vessel was responsible for certain operational matters such as preparation of risk analyses for the vessel; Chevron cannot take responsibility for all matters on board the vessels Macklin testified that Chevron cannot take and manage a vessel over which they had no control. The vessel has certain things they have to manage as part of their business which includes risk analysis and various other shipboard management issues. Where it interacts with an operation which Chevron has ongoing then there is a cross point there but they cannot be responsible for every risk aboard a ship because a ship is its own unit and it has its own management. Asked how Chevron can ensure that the operation can proceed in a safe manner if they do not have control over all the risks associated with an operation, Macklin replied this is because they have carried out meticulous planning of the rig

move since 2004 and a detailed rig move procedures shall secure a safe operation. Asked whether a vessel that had not prepared a risk assessment might constitute a hazard to others, Macklin replied that it would depend on what kind of operation one is talking about.

Macklin replied in the negative to questions whether Chevron had any responsibility for risk assessments being prepared on the vessels. The vessels had their own requirements and control bodies that had to be followed, such as the ISM Code and flag-state control, whose mission it is to ensure that the vessel keeps a certain safety level. Chevron cannot take a ship on and start from the very top and go all the way down through and verify absolutely everything that a ship has. That is why you have the flag state verification, why you have the ISM code and various other codes and that should specify that the ship is to a certain level. Chevron can only control a risk analysis where it interacts with the installation, if the ship is operating on its own, Chevron cannot control every risk that that ship has. That is not in Chevron's control.

Macklin confirmed that he was aware of the guidelines for anchor-handling for the North-West European Area (NWEA). The Commission stated that these were not referred to in the rig move procedures, and asked whether the guidelines underlay the preparation of the plan. Macklin replied that all the participants in the operation in the North Sea had to follow the guidelines and that it was not necessary to refer to them, but that the guidelines are an accepted industry standard and we should not need to make special reference to them at all.

Asked how he was updated about the development of the operation, he testified that he was always frequently contacted along the way. They had an official morning conference call at 08:00 in which the all the relevant personnel from the assets were involved, and prior to that he always talked with the marine representative in order to get an update. They also had another conference call in the afternoon, around 15:30 with all the personnel on the asset. In the course of a rig move, therefore, they hold a number of conferences. In the teleconferences they are given status as to what has happened in the last 12 hours, inter alia weather conditions and how the operation is progressing so that everyone in the shore management is aware of the status. Any problems with the vessels are not taken up in these conferences unless it is a matter of major problems, but are discussed between himself and the marine representative. Asked whether he received information as to whether there were any vessels that distinguished themselves during the operation in question, he replied that he received no such indication.

On 12 April, at 17:20, he received a phone call from the drilling superintendent to the effect that there had been an accident. He was at home at the time and went immediately to the office to man the emergency response room at Chevron's office. Macklin stated that in conformity with the bridging document or management plan Transocean was to have a leadership role, i.e., primacy, in the event of a casualty. For its part, Chevron was to give Transocean every possible support. They had not enshrined any detailed guidelines that covered all scenarios for rescue actions. After the accident they held a wash-up meeting to evaluate the rescue action. The evaluation showed that they had reacted quickly. The authorities' representative for maritime accidents [SOSREP] had set up an office at Transocean. There was good communication between SOSREP and Transocean. He thought that the coordination between different authorities such as the Grampian Police, the Health and Safety Executive, the Coastguard and the Norwegian authorities could have been better. They were saying they were not sure whether it was within their jurisdiction. Macklin thought that was an area for improvement. BP had some special vessels which came to the rig and the Coastguard had helicopters, but he could not recall exactly when. They had not done exercises involving sinking or capsizing, which he considered an unforeseen scenario.

After the Commission was finished with its questions, Attorney Morten Lund Mathisen showed him p. 30 of the rig move procedures, referred to what was said there about loading,

and asked why they needed the stated load share and a tandem operation for this particular rig move. Macklin testified that early in the planning it was considered a risk to deploy the anchor over the stern roller because it goes down rapidly, which to some extent causes a shock load. This was an area they highlighted as a risk. They therefore upgraded the permanent chaser system and installed new collars in Safe Working Load; they put in ground chain between the collar and the chaser pennant; they upgraded the chaser pennant from 76 mm to 83 mm; and did what they could to prevent the permanent chaser system being damaged during deployment of the anchor. In any case they considered the risk too high. For this reason they incorporated into the procedure that another vessel should take some of the weight off the chain, so that the anchor could be properly sunk over the stern. Because of problems with the winch brakes and in order to get a safe deployment of the wire, they had to reduce the load when the rig was to pay out wire by a vessel grappling the chain. Lund Mathisen asked whether they had a contingency plan if the distribution of the load failed, which happened several times. Macklin also said that this was due to problems with the permanent chaser collar, and not that the grapnel fell off when they distributed the weights. They had to use J-hooks in order to recover the anchors due to the problems with the permanent chaser collars. Macklin testified that they had problems with the grapnels. Asked by Lund Mathisen whether they had load calculations for the situation that the grapnel fell off, so that all the load would be transferred to the vessel, Macklin replied that it was highly unlikely that the grapnel would fall off when the anchor came over the stern roller, because it was only static forces. There is nothing moving. If it happened at the other end, the worst that could happen would be that the mooring wire would rush out so it would not have caused a serious problem. Asked whether they had a contingency plan for a vessel's losing the grapnel, as happened to the "Highland Valour" in the afternoon of 12 April, Macklin testified that it was simply a matter of grapnelling again. Lund Mathisen referred to notices that had been discussed in the press, and wanted to ask Macklin whether he was aware of these. Chevron's attorney Lesley Gray referred to the fact that the information to which Lund Mathisen was referring were confidential and so [the question] could not be answered by Macklin. The chairman of the Commission decided not to proceed with this question.

Attorney Lesley Gray referred to the question from the Commission previously, about whether Chevron had the responsibility for all risks associated with the operation, and asked for an amplification of the reply he gave. Macklin testified that if there was an interaction between the installation and the vessel, then Chevron had a responsibility for the risks, but none for risks that only concerned the vessels. They could not accept risks which come under normal vessel management. Attorney Gray also asked whether Macklin, with his experience, felt that he had taken into account all reasonable foreseeable risks. Macklin replied in the affirmative and said this incident certainly was not foreseeable. He referred to what he had previously testified, that the process began in November 2004 and that the whole thing was a process in development and they were always learning new lessons for each rig move they did.

Attorney With asked who had the responsibility for stopping the operation in the period prior to the accident. Macklin then testified that the master of the "Bourbon Dolphin" could have stopped the operation at any time, and so could the Offshore Installation Manager. Everyone is told if at any time you are not happy with the conditions then the operation can be stopped at any time. Attorney With also asked whether they had guidelines if one got seriously off bearing, and if so, how one should then act. He replied that they cannot deploy the anchor when they are off bearing as the "Dolphin" was. When a vessel loses heading like that they must get the heading back again so that they can deploy the anchor.

- **Witness No. 11 took the stand**

Name: Peter Lee
Date of birth: 14 October 1967
Post: Manager for Operational Excellence, Chevron Europe

Lee testified that by degree and profession he was a mechanical engineer, and he joined Chevron 16 years ago. In the course of these years he had held various engineer and HSE posts. He had worked in both Aberdeen and London, most of these years internationally, in Kazakhstan, in the former Soviet Union, Nigeria and the USA.

The post of Manager for Operational Excellence encompasses the traditional health and safety, environmental and medical disciplines and in addition reliability, asset integrity, and process safety within Chevron's operations.

He was not on the rig when the accident occurred, but was based in Aberdeen, at Chevron's offices there. Emergency Response was one of his duties, and he was one of five who functioned as emergency managers serving in the days following the tragedy.

Chevron received notification of the accident at about 17:15 on Thursday 12 April. Numerous members of staff with emergency response duties mobilised to the Emergency Response Room at the Aberdeen office. They reviewed the information that came in, and referred to the emergency response bridging documentation between them and Transocean, the Operational Management Plan. They rapidly concluded that it was Transocean that had the primary responsibility for the response effort, and that responsibility included both the assumption of on-scene command by the Offshore Installation Manager and the onshore emergency management team from Transocean.

In parallel with this, Chevron agreed with Transocean that they would provide assistance and have the responsibility for logistical and personnel issues in the coming hours and days. For that reason they created a separate emergency management team at their offices in Aberdeen, and a crisis management team, which is a senior management team, in order to relieve some of the pressure in relation to external communications, so that the emergency management team could focus on key response actions that were required.

From when the accident was notified and until 21:00 the above-mentioned groups were established. The emergency management team had a number of posts, one to coordinate communication with the accident site, one for logistics questions, one for personnel, one for liaising with various agencies and a formal recorder of anything that transpired within the Emergency Response Room.

After 21:00 they understood the gravity of the event, and they received information that the survivors would be taken to Shetland. Chevron had no permanent local representative on Shetland, so their first priority was to establish immediate local representation. There was a retired police officer on the spot whom they knew had experience from the oil and gas industry and in emergency situations. They contacted him, so that he could be their representative there that evening until they could mobilise the appropriate Chevron management representatives to Shetland the following morning. They were in contact with Bourbon's Management Team, and they confirmed their request for assistance, in the form of accommodation and any help they could give the survivors with the aid of their local contacts.

Shortly before midnight they were notified that the Offshore Installation Manager had decided on a precautionary downmanning (evacuation) of non-essential personnel. He wanted to move 72 of the 99 on board to shore. After midnight they therefore had two main activities.

The representative on Shetland met the survivors after they were discharged from hospital and ensured that they were taken to a hotel in Lerwick and given the necessary provisions such as clothes, money and so forth. The representative did what he could to make them safe and comfortable after the trauma they had undergone.

The other activity for the Emergency management Team in Aberdeen was the logistical arrangements for the evacuation of the 72 personnel from the rig. They were finished with this at 06:00 on Friday 13 April. It was approximately at that point he took on the role of Emergency Manager in the Emergency Response Room (one of five people to fulfil that role as stated earlier). They had a pool of individuals trained up for each of the various posts, and they set up a 24-hour rota, given the gravity of the incident. Between 06:00 and 17:00 on Friday the 13th he was serving as Emergency Manager. The main activities included reserving a number of seats on the first plane to Shetland. They succeeded in reserving seats for three senior Chevron representatives: the General Manager of Operations, a senior HR representative, and the Drilling & Subsea Manager. They also secured seats for Transocean's representatives and for representatives of the British police. Upon arrival the Chevron representatives split up: the Drilling Manager went to Sumburgh Airport in order to coordinate the activities for the 72 evacuees from the rig who had been at the airport since 06:00. The General Manager and the HR representative proceeded to the hotel to offer any assistance required to the survivors including an informal meeting with the survivors over breakfast.

As regards the Emergency Management Team, they had to deal with twokey uncertainties. The one was the desired destination of the three deceased, the other was the required destination of the 72 evacuees. The police wanted to interview them in case they could contribute evidence in connection with the incident. In relation to these two key issues, they were awaiting police instructions. Around 12:00 they were told that the UK police wanted them to send the 72 evacuees to Aberdeen. They made ready an Emergency Reception Centre at the hotel near Aberdeen Airport, with reception facilities such as clothing, interview rooms for the police, and trauma counsellors. These were the principal activities on Friday afternoon.

On Friday afternoon the representative of the Secretary of State (SOSREP) also arrived at Transocean's Emergency Response Room. Lee was informed that SOSREP was to be involved in decisions regarding cutting the chain that connected the vessel to the rig, after having consulted with others. At that point the Coastguard declared that the operation was a recovery operation and no longer a rescue operation.

Asked who led the introductory phase, Lee replied that it was the Offshore Installation Manager who had assumed on-scene command.

To questions about how they were updated, he replied that the two crisis management teams worked in parallel and endeavoured to secure close cooperation and coordination. They therefore had four Chevron representatives in Transocean's Emergency Response Room, while Chevron had a resident Transocean representative with them. Site contact was one of the key individuals in the Emergency Response Room and he was in direct contact with Chevron's Drill Site Manager on board the rig. Chevron had a number of lines of communication to understand the events that were taking place although their response efforts were largely not associated with the events at the scene but were periphery.

Asked whether he had participated in an evaluation of the actual rescue operation, he replied that this was normal practice for Chevron to conduct a debriefing, and review of lessons learned. This was held the following week, and everyone who had served with the emergency response was a participant. They took some lessons, but by and large the emergency response was as effective as it could have been in the tragic circumstances.

To questions about what they learned from the operation, Lee replied that there were two key lessons. The first was they realised the importance of having a local representative on the Shetland Islands so as to support the survivors in the hours after they came ashore. It functioned well, but luck had been with them in that it went so well and that they found a suitable person [the retired police officer] at short notice. They have strengthened that relationship for the future emergency response in the hope that they will never have to use that resource again.

Lee also testified that the second key lesson related to the confusion caused around jurisdictional issues. There were some jurisdictional issues relating to the responsibilities of various UK authorities. They were dealing with two different regional police forces which created some confusion in connection with the destination of the deceased and the 72 evacuees. They received contradictory instructions in the course of the Friday in both the above-mentioned cases. In consequence of this Chevron sought a meeting with the police authorities in order to share their experiences and lessons learnt with them.

Asked whether he had any responsibility for ensuring that the rig carried out emergency response drills, Lee answered that it was Transocean's responsibility as duty holder. He also confirmed that he had not participated in the planning of the rig move operation.

After the Commission was finished with its questions, Attorney Lund Mathisen asked whether he had been involved in the decision to cut the chain. Lee testified that SOSREP arrived late on Friday afternoon. He was informed that SOSREP was to be the final decision-maker regarding the cutting of the chain. He himself was not involved in the discussions about this, but he knows that the various stakeholders were involved in a number of discussions regarding how and when the cutting of the chain should happen. He seems to remember that there was concern for the potential hazard to the rig's mooring pattern if the vessel were to sink at its then position, particularly if she came into contact with one of the other seven deployed anchor chains.

To questions from Lund Mathisen whether he knew who suggested that they cut the chain, Lee replied that he did not know. He also confirmed that it was an assistant SOSREP who was present and not the permanent SOSREP.