IN THE MAGISTRATES' COURT

OF VICTORIA

AT MELBOURNE

Linda Jane Cutler

Informant

v

Stena Drilling (Australia) Pty Ltd (ACN 116 801 435)

Accused

AGREED SUMMARY OF FACTS

1. The prosecution arises from an incident on board the Stena Clyde mobile offshore drilling unit on 27 August 2012. The Stena Clyde is operated by Stena Drilling (Australia) Pty Ltd (**Stena**) and at the time in question was performing drilling operations in Commonwealth waters in Bass Strait. In the course of an operation to attempt to free the drilling mechanism which had become stuck in the sea floor two crew members, Barry Denholm and Peter Meddens, were struck by rotating equipment and suffered fatal injuries.
2. Barry Denholm was employed by Stena as a Toolpusher. He had extensive experience in the offshore oil and gas industry and had worked for Stena and its subsidiaries since 1994 including a number of years' service on the Stena Clyde.
3. Peter Meddens was employed by Total Marine Services Pty Ltd (**TMS**) and had been working on the Stena Clyde under a contract between Stena and TMS since February 2011. He commenced as a roustabout and was promoted to the position of Floorman in June 2011.

Statutory duties

4. The *Offshore Petroleum and Greenhouse Gas Storage Act 2006* (Cth) (**OP&GGS Act**) imposes occupational health and safety duties on a number of classes of persons engaged in offshore petroleum and gas exploration and extraction. Clause 9 of Schedule 3 imposes duties on operators of facilities.

> **9 Duties of operator**
>
> *General duties*
>
> (1) The operator of a facility must take all reasonably practicable steps to ensure that:

(a) the facility is safe and without risk to the health of any person at or near the facility; and

(b) all work and other activities carried out on the facility are carried out in a manner that is safe and without risk to the health of any person at or near the facility.

Specific duties

(2) The operator of a facility is taken to be subject, under subclause (1), to each of the following requirements:

…

(d) to take all reasonably practicable steps to implement and maintain systems of work at the facility that are safe and without risk to health;

…

5. Failure to comply with the requirements of clause 9(1) is an offence.

The charge

6. Stena pleads guilty to one charge contrary to clause 9(4) of Schedule 3 of the OP&GGS Act.

On or about 27 August 2012 in Commonwealth waters in the Otway Basin Bass Strait, Stena, being subject to a requirement under clause 9(1) of Schedule 3 of the *Offshore Petroleum and Greenhouse Gas Storage Act 2006*, omitted to do an act and the omission breached that requirement.

PARTICULARS

1. Stena was the operator of a facility, namely the Stena Clyde semi-submersible mobile offshore drilling unit.

2. Stena omitted to take all reasonably practicable steps to ensure that all work and other activities carried out on the facility were carried out in a manner that was safe and without risk to the health of persons at or near the facility in that it omitted to take all reasonably practicable steps to implement and maintain systems of work at the facility that were safe and without risk to health.

2.1 Stena omitted to carry out a risk assessment and omitted to conduct a toolbox talk with all personnel to be involved in or responsible for using tongs to disconnect the Derrick Drilling Machine from the drill string (namely Trevor Needham, Barry Denholm, Glenn Barrett, Robert Scott, Joshua Aylett and Peter Meddens), prior to carrying out the procedure.

2.2 Stena omitted to use a snatch block of sufficient capacity, having regard to the need to allow a margin for error in the capacity of the rigging, should the operation not proceed as planned.

2.3 Stena omitted to ensure that the snub line was in the optimum position, having regard to the need to allow a margin for error in the capacity of the rigging, should the operation not proceed as planned.

Stena Drilling (Australia) Pty Ltd

7. Stena is a registered Australian company specialising in offshore drilling in the oil and gas industry.

8. The sole shareholder of Stena is Stena Drilling Australia Limited based in the United Kingdom.

Stena Clyde

9. The Stena Clyde is a semi-submersible mobile offshore drilling unit (**MODU**) constructed in 1976.

10. Stena is the Nominated Facility Operator for the Stena Clyde as defined under the OPGGS Act and the *Offshore Petroleum and Greenhouse Gas Storage (Safety) Regulations* 2009. At all material times, Stena was subject to the duties imposed on operators by clause 9 of Schedule 3 of the OPGGS Act.

11. The Stena Clyde MODU has a National Offshore Petroleum Safety and Environmental Management Authority (**NOPSEMA**) accepted Vessel Safety Case (**VSC**), which was approved on 5 July 2010. On 12 July 2012 NOPSEMA also accepted a revised VSC for the Stena Clyde in relation to its proposed work in the Otway campaign. This document represents a review of the approved Stena Clyde MODU VSC and covers the Otway campaign. All drilling activities conducted on the Stena Clyde were undertaken under the Stena Safety Management System as outlined in the accepted safety cases.

Stena and Origin Energy Resources

12. On 26 October 2011, Stena entered into a contract with Origin Energy Resources Limited ACN 007 845 338 (**Origin**) to provide the Stena Clyde together with drilling and other equipment, insurance and personnel for the purpose of drilling wells and performing auxiliary operations as part of a drilling program in the Otway Basin, Bass Strait.

13. As a part of this contract, Stena was required to have an accepted Safety Case for the Stena Clyde, as well as having in place relevant health and safety procedures and standards as described in the NOPSEMA accepted Safety Case Revision for activities in the Otway Basin being performed on behalf of Origin.

Stena Safety Management Systems

14. The Stena Clyde Safety Management System (**SMS**) is described in detail in Part 3 of the Stena Clyde Safety Case. The Stena Clyde SMS is an integrated management system through which the company defines and delivers its business objectives, identifies and manages its risks and systematically reviews performance. This system incorporates all aspects of health, safety and environment.

15. The Stena Clyde SMS also states that it is compliant with the International Safety Management Code.

16. Part 4.2.1, Safe Work Procedures states:

> If during an operation, departure from a procedure is required on the grounds of safety, authorisation for such a change must be given by the OIM (Offshore Installation Manager).

17. The Stena Risk Assessment Principle 1.0 Risk Assessment states:

> A suitable and sufficient Risk Assessment procedure is to be conducted to ensure that all reasonably foreseeable hazards are identified. This allows suitable control measures to be taken to reduce the risk to an acceptable level.

18. The Stena Risk Assessment Guidance outlines that a risk assessment will be conducted by a team of personnel familiar with the equipment to be utilised, who will conduct an analysis of the task to identify all hazards associated with that task. The guidance goes on to outline that this process involves listing the job steps for the task, the hazards

identified, and the risks assessed. The guidance also highlights that the outcome may require modifications to the procedures, equipment, process or more analysis.

19. The Risk Assessment Guidance further states:

> The Manager/OIM or his deputy shall authorise the outcomes of the formal Risk Assessment before any work commences.

20. The Stena Toolbox Talk Principle (1.0 Overview) defines:

> A Toolbox Talk as a means of communication which takes the form of a meeting, held at various times during operations, to pass on relevant information. The Toolbox Talk will identify those personnel responsible, ensure all personnel present are aware of forthcoming operations and procedures and also any control measure that may be required.

21. The Toolbox Talk Principle (1.1 Frequency) states:

> A Toolbox Talk will be held:-
>
> - Prior to a shift commencing.
> - Prior to the commencement of any non-routine operation.
> - At any time where the need for a Toolbox Talk has been identified.

22. Stena also has a "Stop the Job" Policy which states:-

> The Policy means that everyone has the authority and responsibility to halt any part of an operation that in their opinion presents a risk to the Health, Safety and Security of personnel. The Policy also extends to risks associated with operations in relation the Environment and Property / Equipment Damage.
>
> Where work has been halted it must not re-commence until personnel are satisfied that it is safe to continue with the work.

23. Stena has a Barrier Systems Principle that amongst other things discusses the red zone area. Section 8.0 Access to Drill Floor states:

> On all Stena units there are red zones on the drill floor. The red zone is the working area where there is a risk of injury caused by dropped objects from Top Drive or pipe handling equipment or where there is a risk of being struck by or caught in between remotely operated equipment.
>
> The red zone shall be determined by a group of the following personnel:
>
> Master/OIM
>
> Senior Toolpusher
>
> Driller

24. The Barrier Systems Principle (9.0 Work within Red Zone) states:

> The risk on all work within red zone shall be assessed at the appropriate level.
>
> All routine and repetitive work within the red zone shall be identified in a HAZID and described in a matrix.

25. Stena has a Management of Change (**MOC**) Principle which states (1.0 Overview):

> Stena Drilling's risk management philosophy is to reduce the following risks to a level as low as reasonably practicable:
>
> - Risk to personnel
> - Risk to the environment

- Risk of asset damage
- Risk of operational down time
- Risk to our reputation

In keeping with this philosophy, it is a Company requirement that changes, temporary or permanent, to personnel, processes, and equipment are appropriately evaluated, approved and documented.

26. The MOC Principle further states (4.0 Communication of Changes):

    It is essential for the safe execution of Management of Change processes that all those affected by the change are informed of the change and how it may impact upon them.

27. The Stena SMS (5.1 Ongoing Monitoring) states:

    It is necessary to monitor performance in order to assess the effectiveness of the Safety Management System in controlling risks and developing a positive health and safety culture. There are two main ways in which performance is monitored:

    Active systems, which monitor the design, development, installation and operation of management arrangements, risk control systems and workplace precautions

    Reactive systems, which monitor accidents, ill health, incidents and other evidence of deficient health and safety performance

    Legislative compliance in health and safety matters is monitored by the Loss Prevention Manager and Coordinator. A register of all health and safety related acts, regulations, licenses, codes of practice and other regulatory requirements is in place to ensure legislative compliance.

    Monitoring is undertaken on an ongoing basis and against health and safety management performance standards and key indicators.

28. The Tongs used in the incident which is the subject of the charge were Varco Brand Tongs. The user's manual for the Varco HT-Tongs provides instruction in a number of different areas including the training requirement for personnel installing, operating, repairing and maintaining the tongs. This recommended training includes rig safety, tool operation and maintenance. The manual also provides information relevant to the safe operation of the tongs including torque ratings and a recommendation that all staff stay outside the working area of the tong.

29. In section titled 'Operations' at page 5-19 in the HT-Tongs User's Manual is a warning that states:

    WARNING: HT Tongs are critically loaded tools when torqueing up tubular goods. Line pull on lever should be at 90° from axis of lever. Torque on the tong must not exceed manufacturers rating at any time. To avoid injury in case the tong slips, releases or falls, rig personnel must be out of tong's travel area on the rig floor.

30. In August 2012 there was not a hard copy of a Rig Safe Work Method (RSWM) on the use of manual tongs on board the Stena Clyde. There was, however, a RSWM covering this topic in use on board the Stena Spey (another facility in the Stena fleet) which was accessible to crew of the Stena Clyde by electronic means.

31. Section 6 of the RSWM for Use of Manual Tongs on Stena Spey titled ‘Safety Requirements’ states:

    Appropriate levels of Risk Assessments, Lifting Plans and documented Toolbox Talks will be conducted for all operations that pose risk to personnel whether routine or not.

32. The derrick drilling machine (**DDM**) on-board the Stena Clyde is an Aker Solutions brand. The operating instructions for this piece of equipment provide instructions on the operation, maintenance and repair of the DDM. Section 1.1 'General' of the operating instructions contains a warning that states:

> The DDM is a remote operated machine KEEP SAFE DISTANCE
>
> Possible hazards:
>
> - Exposure to excessive force from heavy machinery moving at high speed:
>   - Pipehandler rotation
>   - DDM main shaft rotation
>   - Link tilt operation
> - Danger of crushing
>   - Torque wrench operation
>
> Aker MH strongly recommends performing a risk assessment for all operations whereby personnel require entering the DDM operating envelope. Otherwise all personnel should remain clear of the DDM at all times.

Background to the incident

33. In August 2012, the Stena Clyde was performing drilling operations in Commonwealth waters in Bass Strait approximately 50 kilometres south west of Cape Otway.

34. On Friday 24 August 2012, the Stena Clyde was drilling at a depth of approximately 1278 metres. In response to forecasts of deteriorating weather, back reaming operations had been commenced to prepare for drill string hang-off and unlatching of the Lower Marine Riser Package, however the drill pipe became stuck. Stuck pipe is a phenomenon which occurs when the static forces necessary to move the drill string in the prevailing borehole conditions exceed the rig's capabilities or the tensile strength of the drill pipe.

35. On 24 August, an attempt was made to remove a stand (being 3 joints of drill pipe) from the derrick using rig tongs. The method of rigging up the tongs was similar to the rig up on the date of the subsequent fatal incident. A risk assessment was conducted by the driller Glenn Barrett and signed off by the Senior Toolpusher Trevor Needham and the OIM. There was a Toolbox Talk involving all the relevant crew and chaired by Needham.

36. The crew rigged up the tongs in the manner they had been instructed. However the operation was aborted after two unsuccessful attempts due to high seas and safety concerns.

37. On Saturday 25 August, a successful attempt was made to break out the stand using Rig tongs conventionally with fixed snub lines, during period of reduced rig heave. The stand was then racked back in the derrick and a DDM inspection performed. Various attempts were made over the next three days to free the drill string using industry recognized measures such as jarring, pumping pills and working the drill string from Friday 24 August to Monday 27 August. However due to a number of factors, including poor weather; the pipe remained stuck in the hole. Accordingly, Origin gave approval to sever the drill string using wire line technology.

38. On Monday 27 August 2012, an instruction was received by the Origin Drilling Supervisor on board the Stena Clyde from Origin shore based management to rig up wire line equipment in preparation for running explosive charges down the drill string with

the intention to sever the drill pipe above the stuck point. This would then allow the drill string to be removed above the point where it was severed. The use of explosives was to be conducted by specialists contracted by Origin and employed by the company Schlumberger, who were on board the Stena Clyde at the time.

39. A Toolbox Talk was held at approximately 8:30am that morning to discuss the proposed operation. This meeting was chaired by the Toolpusher Barry Denholm, with instruction on what activities were to be performed by each member of the Stena Clyde crew as well as input being given by the Schlumberger Wireline chief. A risk assessment was discussed during this meeting in relation to backing out the pipe.

40. The rig up of the Schlumberger wireline was completed and members of the crew were sent for a coffee break.

The incident

41. Following consultation with the Origin company representative (**company man**), but in the absence of the rest of the crew, the Toolpusher and Senior Toolpusher as planned during the TBT proceeded to back off the DDM at the top using the torque wrench. This attempt proved unsuccessful.

42. The Toolpusher, Senior Toolpusher and company man then had a discussion about using a tong rig up to grip the pipe and then operate the DDM to break out the connection.

43. The activities and roles were not covered in the previous risk assessment, and amounted to a new activity. This should have caused the Senior Toolpusher to apply the Stena Drilling Management of Change Principles, which would have included performing a new risk assessment, contacting the OIM to obtain approval and effectively communicating the change of plan to the members of the crew through a toolbox talk.

44. Despite this, a risk assessment and fresh toolbox talk were not carried out, and the OIM was not advised of the change of plans. The new plan was devised while many of the crew, including the driller, were still on their coffee break.

45. Upon returning from their coffee break, the crew members were assigned specific tasks to perform. These directions were not given by means of a toolbox talk, but instead by either the Toolpusher or Senior Toolpusher issuing individual directions to each man. The Driller and Assistant Driller (both of whom were involved in the TBT/RA on 24 August) had a brief conversation during which the Driller explained that they were to replicate the rig up from two days earlier with some modification.

46. As part of the rig up arrangement, a 4 tonne snatch block was utilised which would have been operating within its safe working load if the tong lever was operating at 90° to the line pull of the lever. The tong was attached to the drill pipe and put in place by the Toolpusher (Barry Denholm) and Floorman (Peter Meddens).

47. Once the tong was connected to the drill string by the Toolpusher and Floorman, the Toolpusher looked at the driller. The driller also saw another member of the crew give a thumbs-up indicating things were right to go. The Senior Toolpusher asked the Toolpusher if the set-up of all components was ok, but did not either personally or by a nominated proxy verify this.

48. The driller heard the Senior Toolpusher say words to the effect of "Right, here we go" which he took as a direction to apply torque. The driller has stated that he intended for the torque to be applied gradually in order for the tongs to “bite”. After this, personnel would be cleared from the red zone. The Toolpusher was standing at the head of the tong and the Floorman was steadying the tong with the rat’s tail when an unexpectedly high level of torque was applied to the DDM.

49. The driller should not have applied a high level of torque to the DDM while personnel were still within the red zone. Rather, the driller ought initially to have applied very gradual torque, in order to get the tongs to "bite", after which the red zone should have been cleared.

50. The forces generated by the sudden application of torque resulted in the 4 tonne snatch block failing and the drill pipe with the tong attached spinning out of control.

51. The tong weighing 200 kilograms struck Barry Denholm. Peter Meddens (who was further away and not within the red zone) was struck by the associated rigging. Both men died as a result of injuries sustained from the impact of the rig tong and associated rigging.

Investigations

52. After being notified of the incident by Stena, the National Offshore Petroleum Safety and Environmental Management Authority (**NOPSEMA**) began an investigation.

53. Stena also conducted its own internal investigation.

54. NOPSEMA's investigation concluded that on the morning of the incident, members of the drill crew were not given sufficient information to fully understand the amended plan of work and hence to carry out their roles safely. The Toolpusher and Senior Toolpusher failed to apply the Stena Management of Change principles and failed to carry out a new risk assessment and toolbox talk after altering the original plan of works, and the Driller failed to ascertain whether a risk assessment had been carried out prior to implementing the new plan.