EDUCATION, SCIENCE AND TRAINING

SENATE LEGISLATION COMMITTEE - QUESTIONS ON NOTICE
2007-2008 BUDGET ESTIMATES HEARING

Outcome CSIRO

DEST Question No. E019_08

Senator Carol Brown asked in writing on 30 May 2007.

Question:

Can you provide the committee with complete details of any incidents during this month, including any reports, notes, or other information detailing such events?

Answer:

CSIRO has provided the following response.

Southern Surveyor

There were two incidents reported in April 2007. See response to Question E018_08. The report for this incident (Incident SS0231) is attached.

On 13 April 2007 the ship took a heavy roll in adverse conditions and the Main Engine shaft alternator tripped off the Main Circuit Board in response to a frequency fault causing a blackout. Auxiliary alternators were started and power was restored. The incident was not life threatening and did not cause injury to any crew, and there was no damage to the vessel therefore no repairs were required. The report for this incident (Incident SS0230) is also attached.

P&O Maritime Services

INCIDENT REPORTING AND INVESTIGATION

Form No: CF007-3

Incident No: **IR 230**

Complete as a minimum sections 1-7 for LOW POTENTIAL risk, sections 1-13 for MEDIUM POTENTIAL risk, sections 1-15 for HIGH POTENTIAL risk incidents

1. INCIDENT SUMMARY

Vessel: Southern Surveyor | Vessel Position: 4335S 14828E | Date (D M Y): 13.04.07 | Time (HH MM): 0136

Injured Person: | Witness 1: | Witness 2:

Age: | Time in Industry: | Time in Company: | Hrs on Duty: hrs | Days into Swing: d

Injured Person Job Title:

*If contractor, note Company, contact name and phone number

AMSA Report: Navigation Act: Sect 268 Sect 269 Sect 417 MO 32 OH&S (MI)

Client: BOM | Date reported: 13.04.07

Reported to AMSA? (Yes/No) Fm 18: YES Fm 19:

Reported to NOPSA? (Yes/No) Link: NO

Reported to DOTARS? (Yes/No) Link: NO

Incident Type: Tick box or boxes as applicable

Safety	Environment	Quality	Equipment damage	Emergency Response
				X

COMPLETE ALL BOXES: Rate risk according to table below (H=high, M=medium, L=low, Z=zero)

	Safety	Environment	Quality	Equipment damage	Emergency Response
Actual					L
Potential					

Any boxes that have a high risk rating are required to be immediately reported to your Duty Manager & POMS Safety Manager

Risk Severity Table (H = High, M = Medium, L= Low, Z = Zero)

	Health & Safety	Environment	Quality	Equipment Damage	Emergency Response
H	Fatality or serious injury (Medical Treatment, LTI, Alternate Duties or Legal Breach.	Released from site/vessel or media coverage or Legal Breach	Formal customer complaint or Major non Compliance (NC)	>$40,000	Response requiring External Assistance
M	Modified duties injury	Contained on site/vessel Reversible Effects	Informal customer Complaint NC	$2,000 - $40,000	Response requiring internal assistance
L	First aid or no treatment required	Contained onboard no environmental damage	System Observation	< $2,000	Response handled by vessel - No assistance required.

2. INCIDENT TYPE

Health & Safety		Environment		Quality		Equipment		Emergency Response	
Fatality		Pollution		Formal Complaint		Defective		Fire	
Lost time (LTI)		Intentional Discharge		Informal Comp.		Breakdown		Injury	
Med. treatment		Unintended Release		System		Loss		Disease	
First aid		Solid		Procedure		Maintenance		Spill	
No Treatment		Liquid		Commendation		Design		Elect./ Mech Failure	X
Modified duties		Gas		Policy		Use		Grounding	
Hazardous / DG		Other (Specify)		Contract		Damaged		Collision	
Illness				Other (specify)		Other (specify)		Security (specify)	
Near miss								Other (specify)	

3. INCIDENT DETAILS

				TASK		LOCATION	
Struck By		Foreign Body		Performing Maintenance		Engine room	
Struck Against		Caught Between		Cleaning		Deck	
Slip / Trip		Laceration		Crew Change		Bridge	
Fall from Height		Burn		Shore		Galley	
Chemicals		Electricity		Cargo Handling		Accommodation	
Over Exertion		Caught in		Stores Handling		Indoor aisles	
Repetitive		Vibration		Bulk Liquid Transfer		Stairs	
Weather	X	Exposure		Mooring		Wharf	
Procedural		Tide		Travelling		Office	
Allergy		Equipment malfunction		Off Work		Other (specify)	
Poisoning		Other (specify)		Other (Specify)			

4. INCIDENT IMPACT

		HUMAN		ENVIRONMENTAL IMPACT			
Hand / Wrist / Fingers		Shoulders		Atmosphere		Sewage	
Upper / Lower Back		Eyes / Vision		Ocean		Oil / Fuel	
Chest / Torso		Legs / Knee		Contained		Noise	
Head / Neck		Arms / Elbow		Chemical Spill		Chemical Storage	
Face / Teeth		Internal Organs		Garbage		Cargo	
Ears / Hearing		Feet/ Ankles / Toes		Leak		Equip. Failure	
Skin		Other (specify)		Oily Waste		Recycling	
Consciousness				Hazardous Waste		Other (specify)	

5. INCIDENT DESCRIPTION

Give details of events leading up to and including incident (attach diagrams, photos, reports or other information as necessary)

At 0130 hrs duty Engineer responded to an Engine Room alarm (steering gear fault). He acknowledged the alarm and then proceeded to the steering flat. He observed that the rudder was working extremely hard. 0136 hrs the ship took a very heavy roll and at the same time vessel blacked out. Emergency generator auto started. 0140 hrs the duty Engineer started & connected # 3 alternatorto MSB. At this time he was joined in the ER by the Chief & Second Engineers. # 2 alternator was started & connected to MSB. 0154 hrs two thrusters were made made available and the vessel brought head to wind. 0206 hrs the Main Engine was started clutched in & brought up to speed. Engine parameters were closely monitored as the pitch was slowly increased. 0230hrs thrusters were stopped & one alternator shut down. Shaft Alternator was not connected to the MSB until 0900 hrs when the weather had moderated. The cause of the blackout was the Shaft Alt breaker tripping out on frequency fault. Probably caused by a combination of the high prop pitch, rudder angle & ships heavy rolling.

6. JHA Information

Describe actions taken in response of initial JSA/JHA Analyses.

Does this incident relate to an existing vessel JHA? Yes: | No: X

If 'Yes', provide the Number and Title of the JHA: JHA No.: JHA Title:

Date that existing related JHA was last used and reviewed: (Appendix 1 JHA Review and utilization Record)

7. VESSEL ACKNOWLEDGEMENT

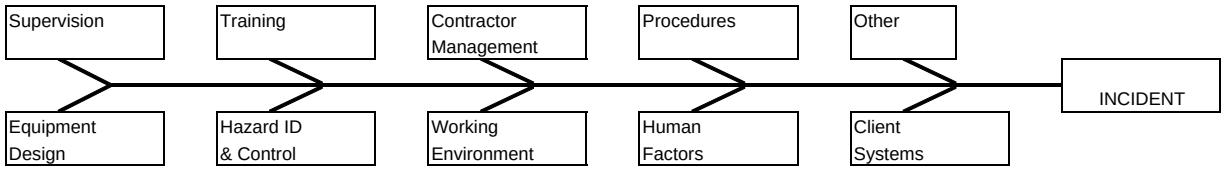
Review information provided, including risk categories, and sign if satisfied correct

Employee	Date	Master	Date	OH&S Rep	Date
Roger W Thomas	13/04/2007	Ian Taylor	13/04/2007	Michael Tuck	13/04/2007

8. IMMEDIATE CAUSE What led to the incident occurring (attach diagrams, photos, reports or other information as necessary)

9. IMMEDIATE CONTAINMENT ACTIONS Describe actions taken to avoid further consequences of incident. Include any first aid treatment onboard

10. ROOT CAUSE / SYSTEM FAILURE ANALYSIS Use fish-bone diagram or other appropriate problem solving tools and attach to this form if required



Description of findings: (often there is more than one root cause that contributed to the incident OR may have reduced the severity of the incident)

No	System Failure	Reason why System Failure Occurred	%Cause
1			
2			
3			
4			
5			

11. PERMANENT CORRECTIVE ACTIONS Actions to be taken to prevent this or a similar incident from reoccurring

C = corrective action, P = preventative action

No	Action To Be Taken	C or P	Assignee	Due by	Closed
1					
2					
3					
4					
5					
6					

Master _____ OH&S Rep _____

12. Client Comments Client comments to be included here if additional information or response required - send to head office for response.

Name: _____ **Position:** _____ **Date:** _____ **Contact No:** _____

13. Verified Corrective Actions / Ship Manager Comments Only to be completed once all actions have been satisfactorily **implemented** (attach Ship Manager response as required)

Ship Manager _____ Date _____

14. Preventative Actions (High risk category incidents) To be completed by Safety/Environment/Quality Manager and / or Ship Manager

Procedures, policy or system changes to be made in response to this incident For preventative action by management

No	Action To Be Taken	Assignee	Due by
1			
2			
3			
4			

15. Verified Preventative Actions Taken Review information provided, including risk category, and sign if satisfied correct

Ship Manager _____ Date _____

P&O Maritime Services

INCIDENT REPORTING AND INVESTIGATION

Form No: CF007-3

Incident No: **IR 231**

Complete as a minimum sections 1-7 for LOW POTENTIAL risk, sections 1-13 for MEDIUM POTENTIAL risk, sections 1-15 for HIGH POTENTIAL risk incidents

1. INCIDENT SUMMARY

Vessel: Southern Surveyor | Vessel Position: 4357S 14959E | Date (D M Y): 18.04.07` | Time (HH MM): 1500

Injured Person: | Witness 1: | Witness 2:

Age: | Time in Industry: | Time in Company: | Hrs on Duty: hrs | Days into Swing: d

Injured Person Job Title:

*If contractor, note Company, contact name and phone number

AMSA Report: Navigation Act: Sect 268 Sect 269 Sect 417 MO 32 OH&S (MI)

Client: BoM | Date reported: 18.04.07

Reported to AMSA? (Yes/No) Fm 18: YES Fm 19:

Reported to NOPSA? (Yes/No) Link: NO

Reported to DOTARS? (Yes/No) Link: NO

Incident Type: Tick box or boxes as applicable

Safety	Environment	Quality	Equipment damage	Emergency Response
				X

COMPLETE ALL BOXES: Rate risk according to table below (H=high, M=medium, L=low, Z=zero)

Safety		Environment		Quality		Equipment damage		Emergency Response	
Actual		Actual		Actual		Actual		Actual	L
Potential		Potential		Potential		Potential		Potential	H

Any boxes that have a high risk rating are required to be immediately reported to your Duty Manager & POMS Safety Manager

Risk Severity Table (H = High, M = Medium, L= Low, Z = Zero)

	Health & Safety	Environment	Quality	Equipment Damage	Emergency Response
H	Fatality or serious injury (Medical Treatment, LTI, Alternate Duties or Legal Breach.	Released from site/vessel or media coverage or Legal Breach	Formal customer complaint or Major non Compliance (NC)	>$40,000	Response requiring External Assistance
M	Modified duties injury	Contained on site/vessel Reversible Effects	Informal customer Complaint NC	$2,000 - $40,000	Response requiring internal assistance
L	First aid or no treatment required	Contained onboard no environmental damage	System Observation	< $2,000	Response handled by vessel - No assistance required.

2. INCIDENT TYPE

Health & Safety		Environment		Quality		Equipment		Emergency Response	
Fatality		Pollution		Formal Complaint		Defective		Fire	
Lost time (LTI)		Intentional Discharge		Informal Comp.		Breakdown		Injury	
Med. treatment		Unintended Release		System		Loss		Disease	
First aid		Solid		Procedure		Maintenance		Spill	
No Treatment		Liquid		Commendation		Design		Elect./ Mech Failure	X
Modified duties		Gas		Policy		Use		Grounding	
Hazardous / DG		Other (Specify)		Contract		Damaged		Collision	
Illness				Other (specify)		Other (specify)		Security (specify)	
Near miss								Other (specify)	

3. INCIDENT DETAILS

				TASK		LOCATION	
Struck By		Foreign Body		Performing Maintenance		Engine room	
Struck Against		Caught Between		Cleaning		Deck	
Slip / Trip		Laceration		Crew Change		Bridge	
Fall from Height		Burn		Shore		Galley	
Chemicals		Electricity		Cargo Handling		Accommodation	
Over Exertion		Caught in		Stores Handling		Indoor aisles	
Repetitive		Vibration		Bulk Liquid Transfer		Stairs	
Weather		Exposure		Mooring		Wharf	
Procedural		Tide		Travelling		Office	
Allergy		Equipment malfunction		Off Work		Other (specify)	Steering Gear Flat
Poisoning		Other (specify)		Other (Specify)			

4. INCIDENT IMPACT

HUMAN				ENVIRONMENTAL IMPACT			
Hand / Wrist / Fingers		Shoulders		Atmosphere		Sewage	
Upper / Lower Back		Eyes / Vision		Ocean		Oil / Fuel	
Chest / Torso		Legs / Knee		Contained		Noise	
Head / Neck		Arms / Elbow		Chemical Spill		Chemical Storage	
Face / Teeth		Internal Organs		Garbage		Cargo	
Ears / Hearing		Feet/ Ankles / Toes		Leak		Equip. Failure	
Skin		Other (specify)		Oily Waste		Recycling	
Consciousness				Hazardous Waste		Other (specify)	

5. INCIDENT DESCRIPTION

Give details of events leading up to and including incident (attach diagrams, photos, reports or other information as necessary)

1500 hours whilst on passage to Hobart at full speed in heavy beam seas vessel experienced a sudden steering gear failure.
The failure was due to the main hydraulic pipe connection to the forward ram blowing off which caused the rams to move to the hard over to port position. The hydraulic oil supply pipe to the ram was completely separated from the inlet connection to the forward ram. The result of this made the steering gear inoperable even in the emergency steering from Steering Flat mode.

6. JHA Information

Describe actions taken in response of initial JSA/JHA Analyses.

Does this incident relate to an existing vessel JHA? Yes: | No: X

If 'Yes', provide the Number and Title of the JHA: JHA No.: JHA Title:

Date that existing related JHA was last used and reviewed: (Appendix 1 JHA Review and utilization Record)

7. VESSEL ACKNOWLEDGEMENT

Review information provided, including risk categories, and sign if satisfied correct

Employee	Date:	Master	Date: 28.04.07	OH&S Rep	Date: 18.04.07
		I Taylor		M Tuck	

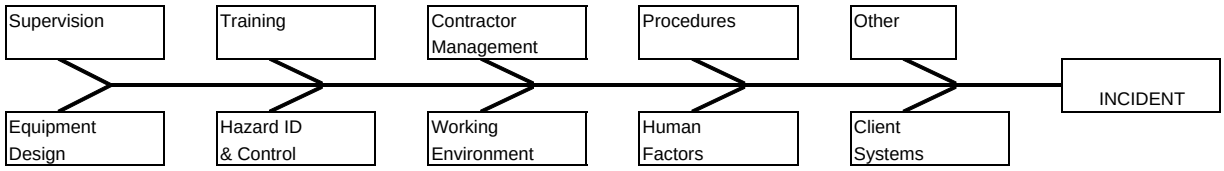
8. IMMEDIATE CAUSE What led to the incident occurring (attach diagrams, photos, reports or other information as necessary)

The opposite end of failed pipe connects to the Relief/Bye-pass valve block. This valve block had separated from its mounting. It was observed that the valve block had only being held in position by one bolt that was fretted and sheared off in the incident. The second attachment bolt under the block was missing.
The valve block being slightly loose may have caused the pipe connection to work of a period of time.
It was also observed that the failed pipe connection was of the olive type, which allowed the pipe to seperate completely from the ram connection.

9. IMMEDIATE CONTAINMENT ACTIONS Describe actions taken to avoid further consequences of incident. Include any first aid treatment onboard

Failed pipe was reconnected to ram and carefully tightened. A wooden shore was cut and driven between the bulkhead and pipe to hold the pipe in place.
A 'G' clamp was utilised to hold the valve block in position and another wooden shore used to support it.
The steering and pilot oil pumps were then restarted and the steering slowly worked until all the air had been extracted from the system. During this exercise the header tank on the bridge was being topped up. 1554 hours vessel underway.

10. ROOT CAUSE / SYSTEM FAILURE ANALYSIS Use fish-bone diagram or other appropriate problem solving tools and attach to this form if required



Description of findings: (often there is more than one root cause that contributed to the incident OR may have reduced the severity of the incident)

No	System Failure	Reason why System Failure Occurred	%Cause
1	Eqipment design	Olive type connection used.	20
2	Wear & Tear	System is 35 years old	70
3	Heavy weather	Heavey weather causing steering gear to work hard	10
4			
5			

11. PERMANENT CORRECTIVE ACTIONS Actions to be taken to prevent this or a similar incident from reoccurring

C = corrective action, P = preventative action

No	Action To Be Taken	C or P	Assignee	Due by	Closed
1	Inspect all similar connection on the system an correct any problems	P	C/E Ship Manager	30/04/2007	
2	Repair failed hydraulic pipe connection	C	C/E Ship Manager	30/04/2007	
3	Repair valve block mounting	C	C/E Ship Manager	30/04/2007	
4					
5					
6					

I Taylor — Master

M Tuck — OH&S Rep

12. Client Comments Client comments to be included here if additional information or response required - send to head office for response.

Name: _____ **Position:** _____ **Date:** _____ **Contact No:** _____

13. Verified Corrective Actions / Ship Manager Comments Only to be completed once all actions have been satisfactorily **implemented** (attach Ship Manager response as required)

Ship Manager _____ Date _____

14. Preventative Actions (High risk category incidents) To be completed by Safety/Environment/Quality Manager and / or Ship Manager

Procedures, policy or system changes to be made in response to this incident — For preventative action by management

No	Action To Be Taken	Assignee	Due by
1			
2			
3			
4			

15. Verified Preventative Actions Taken Review information provided, including risk category, and sign if satisfied correct

Ship Manager _____ Date _____