Report 09-205: stern trawler *Pantas No.1*, fatality while working cargo, No.5 berth, Island Harbour, Bluff, 22 April 2009

The Transport Accident Investigation Commission is an independent Crown entity established to determine the circumstances and causes of accidents and incidents with a view to avoiding similar occurrences in the future. Accordingly it is inappropriate that reports should be used to assign fault or blame or determine liability, since neither the investigation nor the reporting process has been undertaken for that purpose.

The Commission may make recommendations to improve transport safety. The cost of implementing any recommendation must always be balanced against its benefits. Such analysis is a matter for the regulator and the industry.

Final report 09-205

stern trawler
Pantas No.1

fatality while working cargo

No.5 berth, Island Harbour, Bluff

22 April 2009

The *Pantas No.1* alongside No.5 berth, Island Harbour, Bluff

Executive Summary

On 22 April 2009, the Korean-registered fishing vessel *Pantas No.1*, while chartered to a New Zealand – registered fishing company and fully compliant with a New Zealand safe ship management system was discharging its cargo of frozen squid at the New Zealand port of Bluff.

The boatswain (bosun), who was directing hatch operations from inside a rigged safety line at number 3 fish hold, was catapulted forward by the safety rope and fell down the hold when a load that was being hoisted caught on the safety rope, pulling it taught and displacing one of the securing points to which it was attached. The bosun later died from his injuries.

Four unsafe working practices were identified on board the vessel, of which 3 contributed to the accident.

A safety recommendation has been made to the Director of Maritime New Zealand to address the issue of a poor safety culture that existed on board the *Pantas No.1* and to assess whether the poor safety culture might also extend to the ship operator and owner.

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Abbreviations

bosun	boatswain
kW	kilowatt(s)
m	metere(s)
mm	millimetre(s)
Maritime NZ	Maritime New Zealand
SPAN	safety profile assessment number
SSM	safe ship management
UTC	coordinated universal time

Glossary

block	grooved sheave(s) working in a frame or shell
boatswain	foreman or leader of the seamen
cargo runner	a rope, usually wire, reeved through blocks attached to a derrick used for hoisting and lowering a load of cargo
coaming	a vertical erection around hatches, and other openings in a deck to prevent water passing into the openings
derrick	a boom or spar used for the hoisting or lowering weights. Made of wood or steel, controlled by guys, supported by topping lift and pivoted at the lower end
eye pad	a circular loop of metal welded to a fixed structure for securing a hook or shackle
fish pound	the area where fish are dumped after being brought on board in the trawl net
hatch board	a covering for a hatch opening , of which a number are placed across the opening to close the opening
hatchman	person in charge of a hatch
mast house	a small enclosure at the base of a mast or samson post
port	the left-hand side of a ship when looking forward
samson post	a stump mast for a derrick
starboard	the right-hand side of a ship when looking forward
stern ramp	a ramp at the stern of a vessel over which a trawl net is deployed and recovered
topping lift	a rope or tackle for lifting the head of a derrick or boom
trawl net	a strong fishing net for dragging through the sea to catch fish
winchman	the person controlling a winch or winches when discharging cargo

Data Summary

Vessel particulars:

Name:	*Pantas No.1*
Type:	freezer trawler
Class:	fishing ship
Limits:	unlimited
Classification:	Korean Register
Length:	57.82 metres (m)
Breadth:	9.80 m
Gross tonnage:	815
Built:	October 1983, Narasaki Shipbuilding Company, Hokkaido, Japan
Propulsion:	a single Akasaka marine diesel engine producing 1912 kilowatts (kW) driving a single variable-pitch propeller through a non-reversing gearbox
Maximum speed:	17 knots
Owner/operator:	owner – Pantas Corporation operator – Northland Deepwater JV Limited
Port of registry:	Jung-Gu, Busan, Korea

Date and time:	22 April 2009 at about 1930[1]
Location:	No.5 berth, Island Harbour, Bluff
Persons on board:	crew: 40
Injuries:	crew: one fatal
Damage:	nil
Investigator-in-charge:	Captain I M Hill

[1] Times in this report are New Zealand Standard Time (UTC + 12 hours) and are expressed in the 24-hour mode.

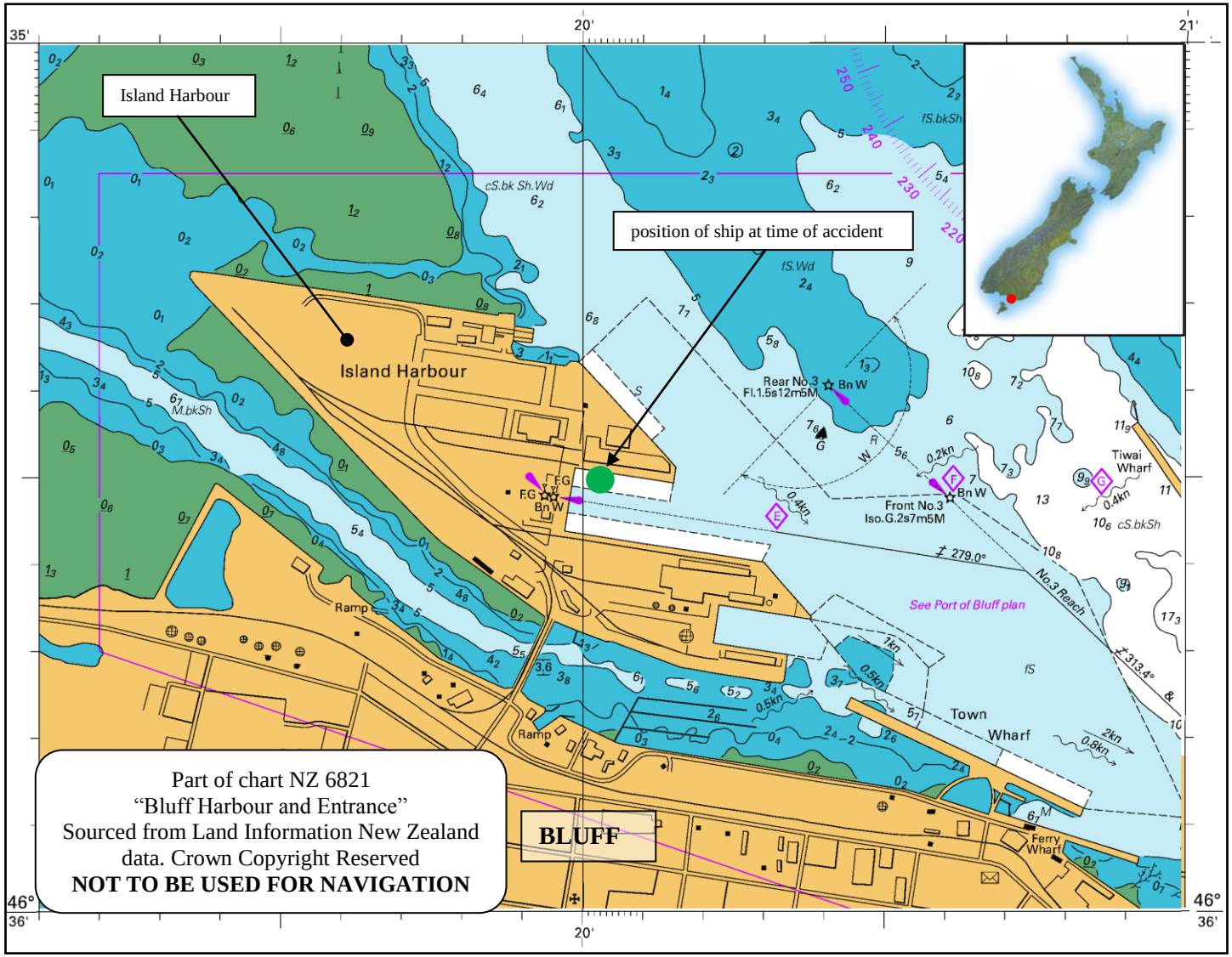


Figure 1
General area of the accident

1 Factual Information

1.1 Narrative

1.1.1 On 21 April 2009 at about 1500, the freezer trawler *Pantas No.1* berthed at No.5 berth, Island Harbour, Bluff after trawling for fish around the Auckland Islands. The discharge of the cargo was due to commence at 0730 on 22 April so, the majority of the crew were stood down for rest until the next morning.

1.1.2 On 22 April 2009 at about 0730, the discharge of the cartons of frozen cargo started from hatch numbers 2 and 3. The cargo from freezer holds 1 and 2 was discharged through number 2 hatch and the cargo from freezer holds 3 and 4 was discharged through number 3 hatch.

1.1.3 Before discharge started a "safety" line was rigged around number 3 hatch. The safety line had been rigged from an eye pad on the main trawl winch through a loop in the main trawl net, then across to and through a loop on one of the lifting strops attached to one of the fish deck hatch boards, then back to another eye pad on the starboard aft side of the main trawl winch (see Figures 2 and 4). The safety line was a polyester right-hand or "Z" laid rope, orange in colour and about 12 millimetres (mm) in diameter. The height of the safety line varied between about 1500 mm at the 2 eye pads to about 200 mm at the after end of the hatch. There was no purpose-designed way to rig a substantial safety fence around the hatch. Number 2 hatch was constructed with a coaming of about 300 mm high which would have required a safety line when the hatch was open.

1.1.4 The discharge of the cargo was by union purchase rig using the vessel's own derricks, one derrick being plumbed over the hatch, the second being swung out over the vessel's side and plumbed over the wharf. The cargo was lifted using a cargo runner fitted to each derrick, with the runner passing through a series of blocks, one at the head of the derrick and one at the heel of the derrick to a cargo winch on the main deck. Both cargo winches were controlled by a single winchman from a position on the starboard side of the main deck forward of the starboard mast house (see Figure 3).

1.1.5 The winchman was normally able to see both the hatch opening and the wharf but unable to see into the freezer hold below. In this case his vision was partially obstructed by equipment and nets stowed on the main deck between him and the hatch opening (see Figure 5). Normal practice, and used in this case, was to have a spotter or "hatchman" stationed at the hatch opening to direct the winchman using either visual or sound or a combination of both signals. The boatswain (bosun) had been acting as hatchman at number 3 hatch for the duration of the discharge.

1.1.6 Work on discharging the cargo of 435 tonnes of frozen squid progressed throughout the day with breaks for lunch, dinner and 2 staggered rest breaks. The majority of the crew were involved with the discharge of the cargo on the vessel. On deck there were 2 winchmen and 2 hatchmen, one for each hatch that was working. Under-deck the rest of the crew were involved in loading the boxes of frozen fish onto a wooden pallet that was inside a cargo net. When the pallet was loaded with the required amount of boxes, the corners of the cargo net were lifted up and hooked onto a cargo hook attached to the 2 cargo runners, which would have been lowered to them under the direction of the hatchman. Once the net had been attached to the cargo hook, the crew would stand clear and the hatchman would direct the winchman in lifting the load out of the hold. Once the load was clear of the hold, the winchman would operate the winches to lift the load up over the side of the vessel and onto the wharf. Once the winchman had lowered the load onto the wharf, the shore-side stevedores would unhook the net and lay it flat so that a forklift could pick up the pallet and boxes of fish and take them to the cool store. The stevedores would then put an empty pallet in the net, hook the net back onto the cargo hook and the winchman would operate the winches to return the net and empty pallet to the fish hold, where the cycle would be repeated.

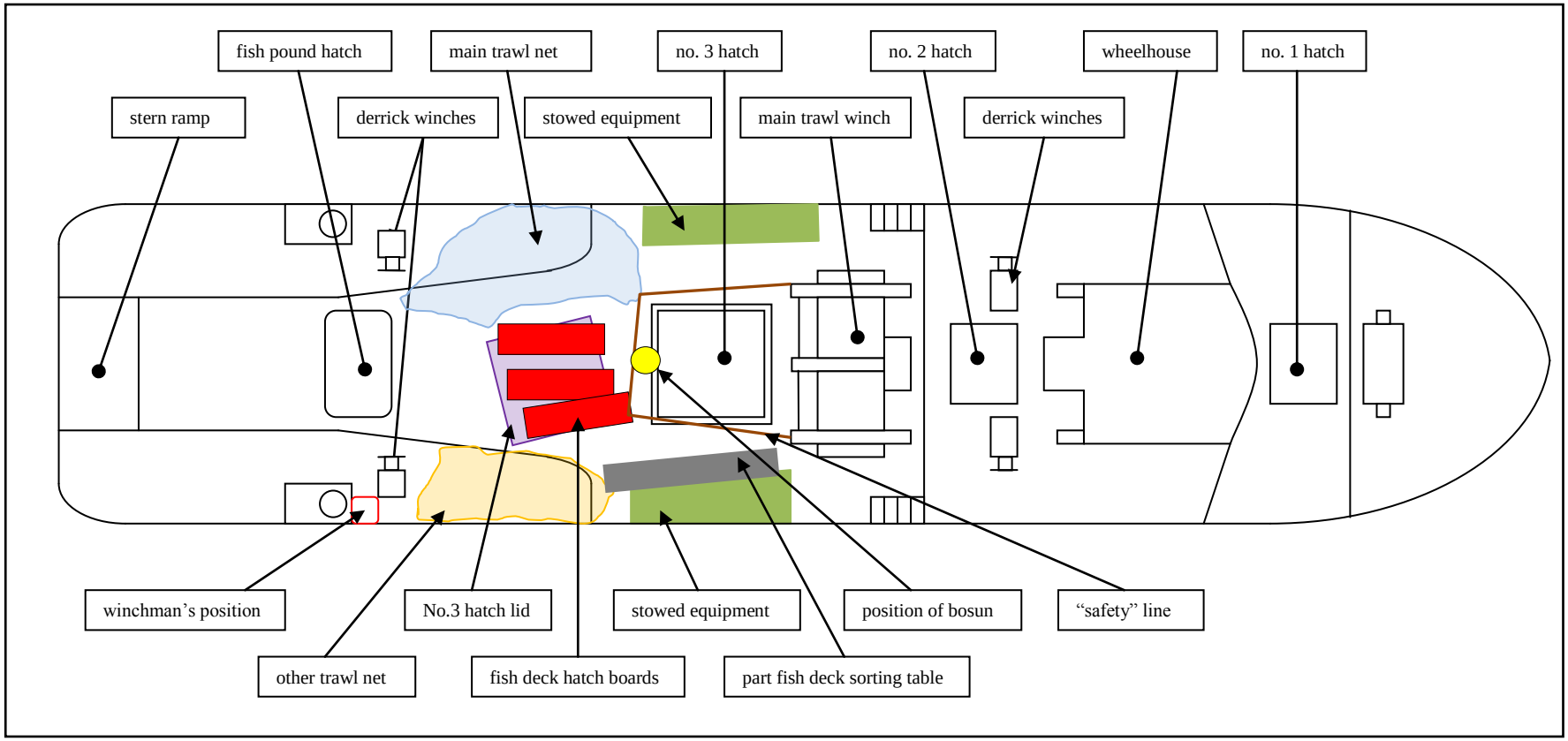


Figure 2
Diagram of the main deck of the Pantas No.1

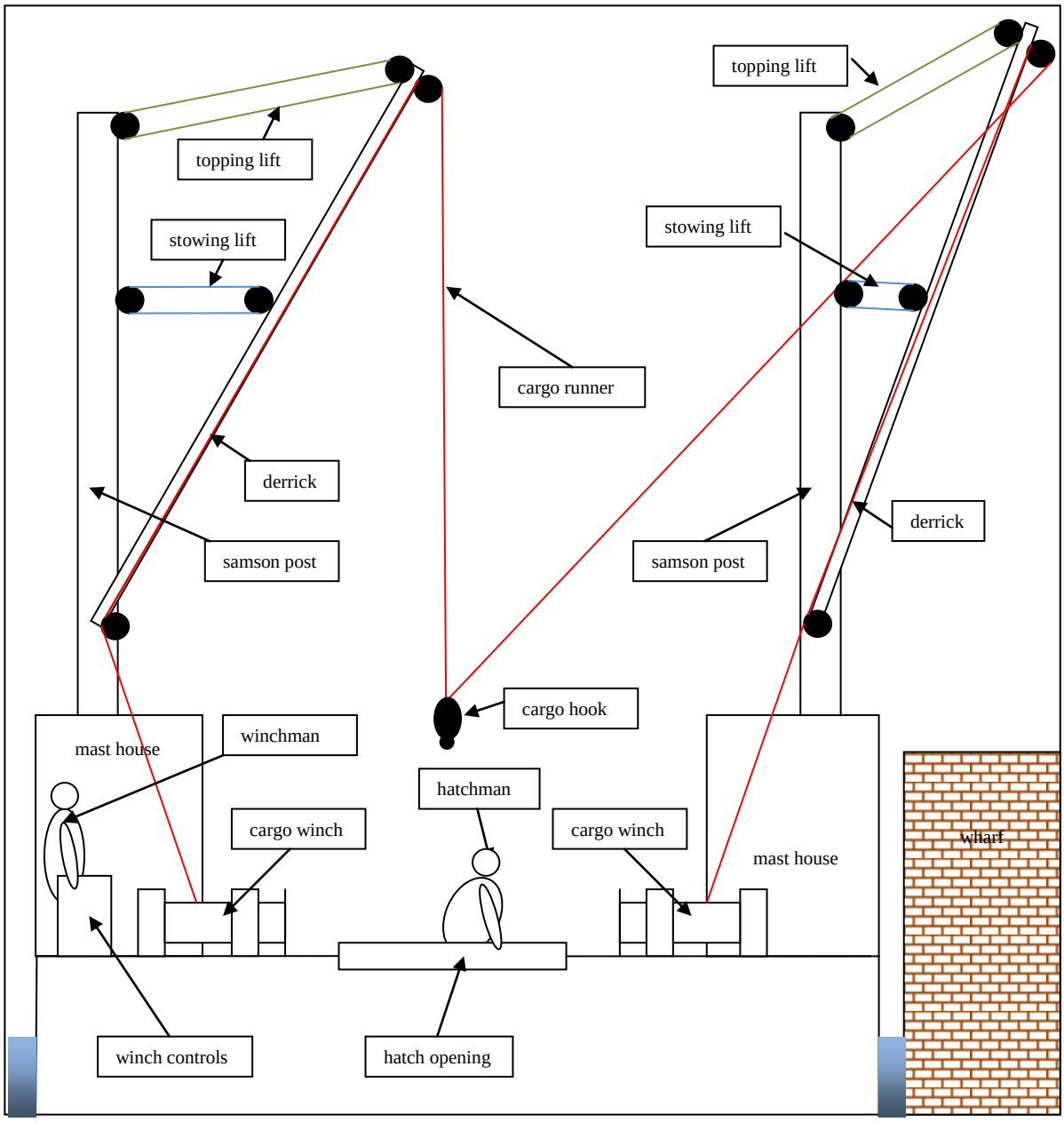


Figure 3
Elevation showing cargo gear rigging

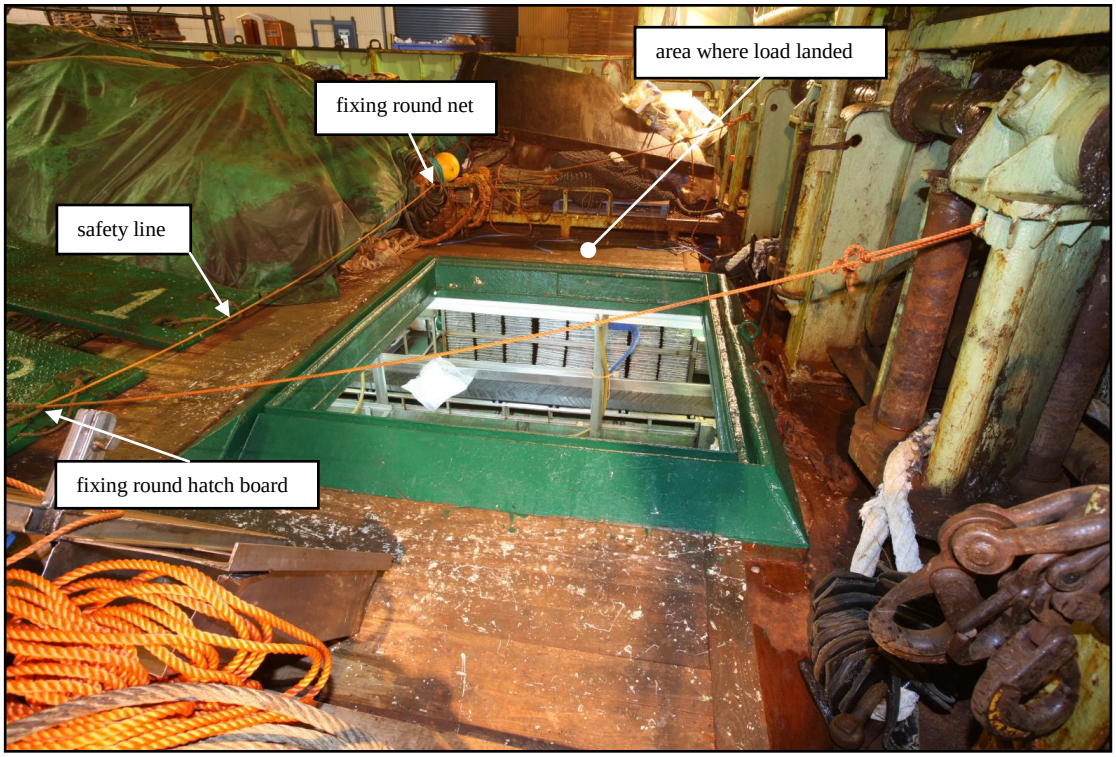
1.1.7 At about 1930, the crew that were engaged in discharging number 2 hold had nearly completed their discharge. The crew in number 3 freezer hold were also coming to the end of the discharge, so all but one went to number 2 hatch via the doorway on the fish deck. The bosun, acting as hatchman for number 3 hold, was crouched at the after end of number 3 hatch indicating and shouting to the remaining crew member in number 3 freezer hold to ensure that the freezer hold was empty, and that any garbage should be placed in the cargo net along with the remaining boxes of cargo for discharge and disposal ashore.

1.1.8 Once the crew member had ensured that the freezer hold was empty, he indicated that the cargo net was ready for hoisting. The bosun then indicated, by shouting and using a whistle, for the winchman to hoist the load out of the hold. As he lifted the load out of the hold using the cargo gear, the crew member in the hatch stepped onto the net and held on; he was being transported up out of the hold on the outside of the cargo net. He said he did this because the other departing crew had removed the portable ladder used to access the fish hold from the fish deck. As the load rose up out of the hold the bosun was crouched down, trying to see under the load to ensure that the hold was empty.

1.1.9 When the winchman saw the crew member on the outside of the net he operated the winch controls to bring the load down onto the deck at the port side of number 3 hatch so that the crew member could get off onto the deck. The winchman later said that once the crew member had got off the cargo net, the bosun indicated with his arm for the cargo net to be put ashore, although the bosun was still looking down into number 3 freezer hold.

1.1.10 The winchman operated the winch controls to lift the net off the deck and over the side, and in doing so focused his attention on the position of the cargo net and where he intended to land it on the wharf. However, as he hoisted the net, the safety rope caught on the bottom of the pallet. As the load rose so did the safety line, drawing the line initially taut then pulling the line through the loop of the main trawl net. As the "safety" line was pulled upwards on the port side, the moveable hatch board was drawn towards the hatch opening, resulting in the safety line being drawn under tension over the hatch opening.

1.1.11 One of the stevedores on the quay noticed that the safety line had caught on the pallet and shouted a warning; however, the warning was either not heard or not understood. As the line tightened it lifted up from the deck behind the bosun, who was crouching inside it, and caught him behind the legs under the buttock area, toppling him into the freezer hold.



Photograph courtesy of the New Zealand Police

Figure 4
Scene of the accident as recreated by the New Zealand Police

1.1.12 As the load was swung out over the side of the vessel the safety line dragged the moveable hatch board over the opening, and as the load was lowered onto the quay the hatch board was left suspended by the safety line in the hatch opening above the bosun, who was lying at the bottom of the hold.

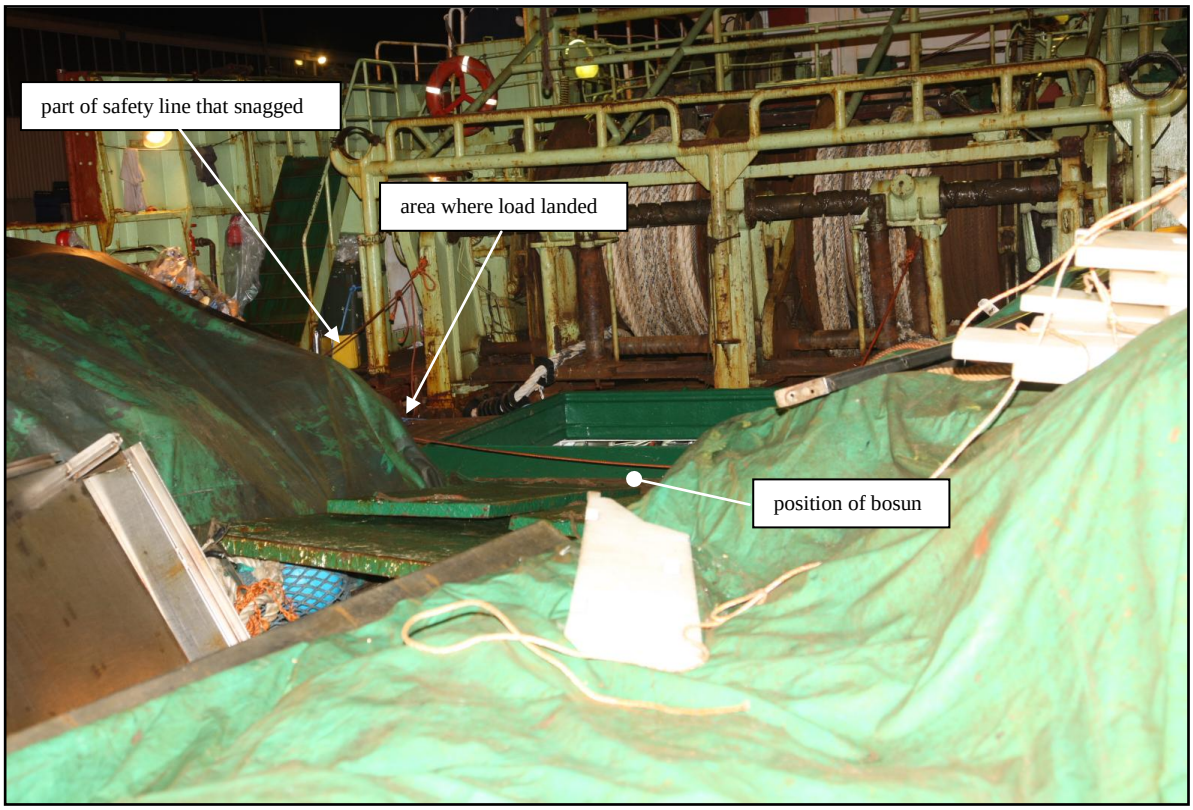
1.1.13 The crew who had been in number 3 fish hold immediately returned to the aid of the bosun, who was unconscious. Realising the danger to him from the suspended hatch board, they moved the bosun away from the centre of the hatch. One of the 2 stevedores assisting with the discharge jumped onto the vessel and went to the hatch opening to give assistance to the crew; the other stevedore raised the alarm ashore and arranged for an ambulance.

1.1.14 Once the crew had moved the bosun to the side of the hatch, they cut the safety line at deck level and lowered the hatch board down into the hold. The crew then placed the bosun onto the hatch board and used this to lift the bosun out of the hatch and onto the wharf using the derricks.

1.1.15 At about 1943, the ambulance service arrived at the vessel, and after administering aid to the bosun the ambulance took him to Southland Hospital at about 1955.

1.1.16 The bosun sustained serious injuries to his head, neck and torso. On 23 April he was transferred by air ambulance to Christchurch Hospital's neurosurgical unit. On 29 April 2009, the bosun died, in hospital, from the head injuries he had sustained during the accident.

1.1.17 It was not until later the following day that the Commission's investigator arrived on board the *Pantas No.1*. By the time he arrived the crew had welded a series of stanchion holders around number 3 hatch and rigged a full safety fence with 3 tiers of safety line. However, 2 days later when the investigator re-boarded the vessel, the fish pound hatch had been opened for some reason. No safety fence had been erected around this hatch, not even a safety line similar to that which had been rigged around number 3 hatch the day before. Anybody walking on or off the vessel was required to walk around this open hatch. No warning signs had been erected to warn people of the open hatch.



Photograph courtesy of New Zealand Police

Figure 5
View from winchman's position

1.2 Vessel information

1.2.1 The *Pantas No.1* had been built in 1983 by Narasaki Shipbuilding Company in Hokkaido prefecture, Japan. The vessel was owned by the Pantas Corporation of Busan, Korea and managed by Sea Jho Company Limited of Christchurch, New Zealand.

1.2.2 The *Pantas No.1* was a steel hulled freezer stern trawler with an overall length of 57.82 m and a breadth of 9.80 m. The vessel had an international gross registered tonnage of 815.

1.2.3 The *Pantas No.1* was classed as a fishing ship with the Korean Register and registered in Jung-Gu, Busan, Korea. When operating out of New Zealand as a fishing ship it was under New Zealand safe ship management (SSM) administered and approved by Lloyds Register. The SSM certificate for the *Pantas No.1* had been issued on 03 November 2006, and was valid until 23 October 2010.

1.2.4 On 7 December 2006, Maritime New Zealand (Maritime NZ) issued a policy on foreign chartered fishing vessel inspection and compliance (see Appendix 1). The policy took into account instances of very serious safety, operational and structural deficiencies that had resulted in the detention of a number of foreign chartered fishing vessels. A lack of safety equipment that would normally be required aboard an equivalent New Zealand fishing vessel had also, on at least one occasion, resulted in the death of a crew member of a foreign chartered fishing vessel. The policy introduced a more rigorous inspection and compliance regime for foreign chartered fishing vessels with inspections every 6 months.

1.2.5 From records provided by Maritime NZ, the *Pantas No.1* had been inspected on the following dates, with the results shown:

Date of Inspection	Result of inspection
25 January 2007	A maritime safety inspector attended the vessel and carried out a flag state inspection/safe ship management inspection. Vessel detained due to expired chief engineer's certificate of competency.
08 February 2007	A maritime safety inspector attended the vessel to release the vessel from detention as a valid certificate of competency for the chief engineer had been obtained.
30 March 2007	A maritime safety inspector attended the vessel to carry out a SSM initial audit (see Appendix 2)
01 May 2007	A Maritime Safety Inspector attended the vessel as a crew member had been lost overboard during the voyage. A foreign chartered fishing vessel inspection report was not completed.
10 October 2008	A maritime safety inspector attended the vessel and carried out a foreign chartered fishing vessel inspection. The maritime safety inspector noted 12 deficiencies, which might not necessarily have been exhaustive. (see Appendix 2).
16 December 2008	A maritime safety inspector attended the vessel to close out deficiencies noted in the inspection of 10 October 2008. No further inspection was carried out.
14 January 2009	A maritime safety inspector attended the vessel and carried out a foreign chartered fishing vessel inspection. Work was in progress on the watertight doors to ensure closing. Vessel was not noted as being sub-standard (see Appendix 3)
24 April 2009	After the accident. A maritime safety inspector carried out a winch test on number 1 centre derrick. No faulty operations were observed.

1.3 Organisational and management information

1.3.1 The Pantas Corporation, the owner, had entered a charter party agreement on 23 January 2009 with Northland Deepwater JV Limited, the operator, which was a commercial fishing company registered in New Zealand.

1.3.2 Under the charter party agreement, Pantas Corporation owned and operated a fishing vessel suitable for catching fish specified in the list of the annual catch entitlement held by the operator.

1.3.3 The Pantas Corporation was responsible for the recruitment, supply, training, qualifications, travel, accommodation, repatriation, provisioning, wages, cash advances and health, injury, death and welfare of all crew employed on board the vessel. The owner also undertook to comply with all requirements of the Code of Practice on Foreign Fishing Crew (Department of Labour, New Zealand Government, 2006).

1.3.4 Section 15.2 of the charter party agreement stated that:

> the Owner's officers and crew on board the vessel shall be subject to the laws and regulations of Korea but shall otherwise observe the laws, regulations and customs of New Zealand throughout the duration of their stay in New Zealand.

1.3.5 The Code of Safe Working Practices for Merchant Seafarers (the Code) (Maritime New Zealand, 2007) reflects the requirements of the Health and Safety in Employment Act 1992, the Maritime Transport Act 1994, the Maritime Rules and the Marine Protection Rules (New Zealand Government, 1992, 1994, 2007). Chapter 6 of the code dealt with the means of access and safe movement, and stated (in part):

> Maritime Rules place an obligation on both the master of a ship and the employer of the master to ensure that a safe means of access is provided and maintained to any place on the ship to which a person may be expected to go. In carrying out the duties arising from these Rules full account must be taken of the principles and the guidance in this Code. …
>
> … Places on the ship where people may be expected to go include accommodation areas as well as normal places of work. …
>
> …All deck surfaces used for transit about the ship and all passageways, walkways and stairs must be properly maintained and kept free from substances liable to cause a person to slip or fall.
>
> Areas uses for the loading and unloading of cargo or for other work processes or for transit should be adequately and appropriately lit.
>
> The employer and master are also responsible for ensuring that any permanent safety signs displayed on board the ship are clear, legible and in the appropriate language.
>
> Any opening, open hatchway or dangerous edge into, through or over which a person may fall shall be fitted with secure guards or fencing of adequate design and construction. Advice on guardrails and safety fencing is given in Chapter 18 [13] of this Code. These requirements do not apply where the opening is a permanent access way, or where work is in progress which could not be carried out with the guards in place.

Section 13.4 of the Code dealt with the guarding of openings and stated:

> People may fall or trip on hatchways. Hatchways open for handling cargo or stores should be closed as soon as work stops, except during short interruptions where they cannot be closed without prejudice to safety or mechanical efficiency because of the heel or trim of the ship.

> The guard-rails or fencing should not have sharp edges and should be properly maintained. Where necessary locking devices and suitable stops or toe-boards should be provided. Each course of rails should be kept substantially horizontal and taut throughout their length.
>
> Guard-rails or fencing should consist of an upper rail at a height of 1 m and intermediate guard rails at distances not exceeding 380 mm and the lowest rail is not to be more than 230 mm above the deck. The rails may consist of taut wire or taut chain.
>
> Where the opening is a permanent access way, or where work is in progress which could not be carried out with the guards in place, guards do not have to be fitted during short interruptions in the work, eg for meals, although warning signs should be displayed where the opening is a risk to other persons.

Section 21.1 dealt with the general requirements for the use of lifting plant, and stated:

> **Use of lifting equipment**
> Loads should if possible not be lifted over a person or any access way, and personnel should avoid passing under a load that is being lifted.
>
> No person should be lifted by lifting plant except where the plant has been designed or especially adapted and equipped for the purpose or for rescue or in similar emergencies.

1.4 Personnel information

1.4.1 The bosun was a 52-year-old South Korean national who had joined the *Pantas No.1* on 14 November 2008 in the rank of bosun.

1.4.2 The winchman was a 36-year-old Indonesian national who had joined the *Pantas No.1* on 13 October 2008 in the rank of crew member.

1.4.3 The crew member who rode the sling was a 31-year-old Indonesian national who had joined the *Pantas No.1* on 8 August 2007 in the rank of crew member.

1.5 Climatic conditions

1.5.1 The weather was described as being cloudy with light westerly winds, with patches of fog during the morning. One of the stevedores said later that there had been a shower of rain early in the evening.

1.5.2 The table below shows times of sunrise and sunset as obtained from the New Zealand Nautical Almanac (Land Information New Zealand, 2008)and an interpolation to give the approximate time of sunrise and sunset on 22 April 2009.

Times of Sunrise and Sunset at Bluff		
Date	**Sunrise**	**Sunset**
17 April 2009	0726	1806
27 April 2009	0739	1749
22 April 2009	0732	1757

1.5.3 The table below shows times and heights of high water at Bluff as obtained from the New Zealand Nautical Almanac (Ibid) and an interpolation to give the approximate height of tide for the time of the accident.

Times and Heights of High and Low Water at Bluff		
Date	**Time**	**Height (m)**
21 April 2009	2323	2.5
22 April 2009	0535	0.9
	1140	2.6
	1756	0.8
23 April 2009	0006	2.6
22 April 2009	1930	1.05

2 Analysis

2.1 The crew on board the *Pantas No.1* were carrying out a routine operation that was undertaken at the end of each fishing trip; the discharge of the cargo of fish that they had caught and processed during the voyage. There was nothing untoward about the purpose of the operation in general, nor the manner in which the operation was undertaken.

2.2 The weather was calm and clear, and although there had been a rain shower this had finished some time earlier. Darkness had fallen' with sunset being at about 1757, however this would not have affected operations as the deck was adequately lit by the vessel's own lighting.

2.3 At the time of the accident the trawl deck of the *Pantas No.1* was lower than the wharf owing to the height of the tide, approximately 250 mm higher than low water, which had occurred at about 1756. The deck of the vessel being lower than the wharf provided the stevedores on the wharf with a clear view to the deck of the vessel. The winchman, located on the starboard side of the vessel, would not have been able to see the flat surface of the wharf but would have had an adequate view of the wharf edge and the stevedores standing on it.

2.4 The winchman's view of the hatch opening was partially obscured by a trawl net and other equipment stowed on deck. This is probably why the bosun was using whistle signals as well as arm movements to direct the winchman. One of the bosun's tasks was to direct the winchman until the load was clear of the hatch and any other obstructions the winchman might not see, until such time as the load was in full view of the winchman and he was able to control its progress unaided.

2.5 The winchman, from his position on the starboard side, was about 13 m away from the position where he lowered the net to the deck. The safety line was constructed of 12 mm orange line, giving an angular resolution of about 0.053°. The minimum angular resolution of the eye with normal vision, in good visibility, is between 0.02° and 0.03° (Tidwell, 1995) so under good conditions the line should have been visible to the naked eye. However, although the area was adequately lit from above, the line would have been in the shadow of the net being lifted and the colour of the line would have blended into the background of other lines and equipment. The winchman therefore might not necessarily have been expected to notice it caught up on the bottom of the load he was controlling, particularly as he had been given the signal from the bosun to hoist and was then focussed on that task.

2.6 The "safety" line could not be described as a fence or guard rail and did not comply with the requirements of the Code in, the number, height, tension or position of the lines. The bosun as deck supervisor would have overseen or at least assisted in the placement and fitting of the "safety" line, and as hatchman at the hatch where the accident happened could have personally ensured that the "safety" line was rigged for his own safety. Why he chose to accept it as a barrier could not be determined.

2.7 Individual actions can be classified in several different ways; in 1990 James Reason proposed some distinctions that have become widely accepted. Firstly, he made an important distinction between 2 broad groups of individual actions that increase risk (Walker, 2004).

> **Errors**: those occasions in which an individual's planned sequence of mental or physical activities fails to achieve their intended outcomes, and when these failures cannot be attributed to the intervention of some chance agency (Reason, 1990).
>
> **Violations**: deliberate deviations from an organisation's safety procedures drawn up for the safe or efficient operation and maintenance of plant or equipment (Health and Safety Executive, 1995).
>
> The emphasis in the definition of violations is the word "deliberate". Many unsafe acts may involve non-compliance with a procedure of some form, but with violations we are interested in those where there was some intention to deviate. Even though violations are deliberate breaches, it should be noted that many of them are conducted with good intentions, i.e. to assist the organisation to meet its objectives (Mason, 1997).
>
> Violations are not usually the last event in an accident sequence. However, they tend to increase the risk of subsequent errors as they make the environment less understood and less error-tolerant. Violations are a significant safety issue as they undermine a basic assumption of a safety management system – procedures will be followed. Some violations can also be difficult to detect as employees hide them (as they obviously want to minimise the likelihood of any disciplinary action). Violations are also important because of what they say about an organisation. The extent of violations, and the way they are treated by employees and managers, provide a good insight into the overall safety culture in an organisation (Hudson, 2000).
>
> Reason (Ibid) (Reason J. and Hobbs, 2003) has distinguished between three types of violation that are of interest to safety management:
>
> • **Routine violations**: These violations are those which have become the normal way of operating for employees in the work environment of interest. They usually involve cutting corners at the skill-based level of performance. They have usually developed because they reduce effort or discomfort and are associated with a very low perception of accident risk. They are also usually associated with a lack of enforcement or appear to be tolerated by management.
>
> • **Optimising violations**: These violations develop due to an individual's desire to improve his/her work situation by fulfilling motivational goals unrelated to the functional aspects of their job. Examples of such motives include a need for excitement (during a boring task), a desire to impress others or inquisitiveness. Labels such as "thrill-seeking", "showing off" or "horseplay" apply to such violations. The tendency to optimise non-functional goals can become part of some individual's style of working. Optimising violations are generally done at a rule- based level of performance and involve a low perception of risk.
>
> • **Situational violations**: These violations arise in a particular situation because a deviation from procedures appears to be needed to get the job done. In other words, employees have to deal with a mismatch between the work situation and the procedures. Situational violations are typically conducted at a rule-based level of performance, but in exceptional cases can occur at the knowledge-based level. They can be associated with a higher level of perceived risk than routine violations. If the situation keeps repeating, then the employee behaviour may develop into a routine violation.

2.8 The bosun had probably stepped over the "safety" line to afford himself a better view into the fish hold. As the deck supervisor he should have been aware of the required procedures for safe discharge operation, and if he was, that the safety line did not comply with Code requirements and that stepping inside it was an additional violation. He probably committed violations with the rationale that he needed to do this to get the job done and this was the quickest and easiest way, thus indicating a situational violation. He had probably stepped over the safety line and entered the "unsafe space" around the hatch opening on several occasions during the day, and might well have done so on numerous occasions indicating that this had become a routine violation.

2.9 Organisational influences include fallible decisions of upper-level management that directly affect supervisory practices and resource management. The *Pantas No.1* had been constructed in 1983 as a stern freezer trawler, with hatches that opened in the deck to allow the discharge of the cargo when required. However, no facility existed at the time to allow for fencing or guard rails to be fitted around the open hatch. It could not be established for how long makeshift safety lines had been in use around the hatches, and through their supervisory practices had either not noticed that the hatch openings were unguarded or chosen to ignore the fact. The unguarded openings had not been noted as a hazard.

2.10 The task of erecting safety barriers around open hatches had been made difficult for the crew owing to poor maintenance of the stanchion arrangement, a situation that had been accepted by both management and crew for some time. The failure of the crew to consider any form of protection around the fish pound hold observed by the investigator 2 days after the accident is significant. Their reaction to the accident involving the bosun was to fully fence number 3 hatch only, yet the owners, master and crew did not have the safety awareness to extend this fix to other hatches and parts of the ship as well.

2.11 In December 2006, Maritime NZ reacted to evidence of serious safety, operational and structural deficiencies on foreign chartered fishing vessels by introducing a more rigorous inspection and compliance regime at 6-monthly intervals. From the records provided by Maritime NZ, the first foreign chartered fishing vessel inspection of the Pantas No.1 was carried out in October 2008, approximately 21 months after a flag state inspection/SSM inspection (see Appendix 2) on 25 January 2007. The report of inspection listed 12 deficiencies; all of a safety nature, that were required to be completed before departure (see Appendix 3). The Pantas No.1 was visited 3 other times within the 21-month period for other reasons.

2.12 One reason was to carry out an SSM initial audit on 30 March 2007, when the maritime safety inspector completed a safety profile assessment number (SPAN) for the vessel. Since 1999, Maritime NZ had sought to introduce a system for benchmarking the safety performances of all commercial vessels. The SPAN system was introduced; however, the system had suffered some initial problems and had been reviewed and amended in 2003.

2.13 The SPAN system in place at the time of the accident used a number of elements to calculate the SPAN for each vessel. The primary element was a word picture, which was used to evaluate the general condition of a vessel and the way its SSM system was operating. Word pictures were a standard auditing procedure and helped to provide a standard method of evaluation for all the vessels, irrespective of who carried out the inspections. The Maritime NZ word picture (see Appendix 2) was used both by Maritime NZ maritime safety inspectors, and by SSM company surveyors and auditors. It consisted of descriptions for 11 assessed areas against which an inspector could evaluate a vessel using a total score of 100, where 0 was safest and 100 was least safe. The total from the word picture was adjusted for each of 5 other factors – oil spills, accidents or incidents, complaints, inherent risks and deficiencies from surveys – to give the final SPAN for the vessel. The SPAN was intended to reflect the current state of a vessel, including its maintenance and operations. The most recent SSM word picture for the *Pantas No.1* was completed on 30 March 2007 by a maritime safety inspector and gave a score of 67.

2.14 The foreign chartered fishing vessel inspection and audit comprehensively covered the physical inspection of the ship and safety equipment to ensure that it was up to standard. The deficiencies noted in the October 2008 inspection were indicative of a poor safety culture, something not typically covered or identified in a port state control type inspection.

2.15 As Hudson (Ibid) stated, "The extent of violations, and the way they are treated by employees and managers, provide a good insight into the overall safety culture in an organisation". The act of a crew member riding a cargo net out of a hold represents a significant hazard under the Health and Safety in Employment Act 1992 (Ibid) within New Zealand and is not accepted industry practice anywhere. This act could possibly have been an optimising violation and involved a low perception of risk by the crew member. But the point that it was not questioned or stopped by the bosun suggests that it was not unusual and possibly routine.

2.16 Described above are 4 examples of unsafe acts that indicate that the safety culture within the organisation on board the vessel was less than optimal: not properly fencing number 3 hatch, stepping inside the "safety" line, riding the load and not fencing the fish pound hatch. However, as Shappell and Wiegmann note (Shappell, 2000):

> Not surprising, given the fact that human beings by their very nature make errors, these unsafe acts dominate most accident databases. Violations, on the other hand, refer to the wilful disregard for the rules and regulations that govern the safety of flight. The bane of many organisations, the prediction and prevention of these appalling and purely "preventable" unsafe acts, continue to elude managers and researchers alike.

2.17 The 4 unsafe acts are active failures as described by James Reason (Ibid). However, behind these active failures lie latent failures within the system that allowed these active failures to occur. Three more levels of human failure were described by Reason, which were: preconditions for unsafe acts, unsafe supervision and organisational influences.

2.18 Preconditions for the unsafe acts could be fatigue after working all day, get-home-itis where the crew being on the last net for number 3 hold after which they could finish work possibly encouraged them to take greater risks than normal, complacency and a failure to communicate and coordinate effectively.

2.19 A poor safety culture on a foreign-registered vessel with foreign crew is not something easily rectified by Maritime NZ. Making any inroads into improving the safety culture on such vessels is going to require an international approach. Meanwhile, about all Maritime NZ can do is continue to inspect and where necessary detail such vessels. This act alone might eventually enforce a change in management culture through financial loss.

3 Findings

Findings are listed in order of development and not in order of priority.

3.1 The bosun of the Pantas No.1 died from injuries received when he fell from the deck into number 3 cargo hold, having been catapulted forward by a safety line, that became suddenly taught when it caught on a load being hoisted from the deck adjacent to the hatch.

3.2 The safety line did not comply with the requirements of the Code of Safe Working Practices for Merchant Seafarers for fencing off deck openings and as rigged would have done little to prevent persons falling down the hold.

3.3 The design of the ship did not allow for the rigging of an effective fence or barrier around number 3 hatch that would have complied with the Code.

3.4 The bosun had elected to stand inside of the safety line so that when it became taut there was no defence against his falling down the hold.

3.5 Another crew member electing to engage in the unsafe practice of riding the cargo sling as it was being hoisted from the hold indirectly contributed to the accident, because his presence on the cargo sling meant the load had to be landed temporarily adjacent to the hatch, where there was minimal space and a high risk of the load catching on obstructions.

3.6 The poor standard of fencing around number 3 hatch, the bosun standing inside the safety line near the edge of the hatch, the crew member riding the cargo sling as it was hoisted from the hold, and an open fish pound hatch being left unfenced 2 days following the accident showed that the violations contributing to this accident were probably not isolated occurrences, but more symptomatic of a poor safety culture on board the *Pantas No.1*.

4 Safety Actions

4.1 After the accident the Pantas Corporation modified the hatch coaming on the *Pantas No.1* to allow stanchions to be fitted and supplied removable stanchions and safety line to enable the hatches to be guarded adequately when in use.

5 Safety Recommendations

The Transport Accident Investigation Commission Act 1990 requires the Commission to issue its recommendations to the appropriate regulator even though another person or organisation may appear to be the more appropriate recipient. This is because the regulator will be better placed to ensure that these recommendations are, if appropriate, implemented across the industry rather than just with a single operator.

The following safety recommendations are not listed in any order of priority:

5.1 On 24 June 2010 it was recommended to the Director of Maritime New Zealand that she address the following safety issue:

5.1.1 A culture of poor adherence to safety standards existed on board the *Pantas No.1*, which possibly extends up through the operator and owner given the design deficiencies for fencing off openings, and the examples of unsafe behaviour exhibited by more than one member of the crew, indicating that this operator might require close regulatory supervision.

Approved on 23 June 2010 for Publication

Mr John Marshall QC
Chief Commissioner

Appendix 1

MARITIME NEW ZEALAND

Our Ref: CSM 05000-02

7 December 2006

LEVEL 10, OPTIMATION HOUSE
1 GREY STREET
PO BOX 27006, WELLINGTON
NEW ZEALAND

TELEPHONE +64-4-494 1206
FACSIMILE +64-4-494 1263
WWW.MARITIME.NZ.GOVT.NZ

FOREIGN CHARTERED FISHING VESSEL INSPECTION AND COMPLIANCE POLICY

For many years it has been the policy of Maritime New Zealand to inspect foreign flagged fishing vessels chartered by New Zealand fishing companies upon their first arrival in New Zealand and at regular intervals thereafter to ensure they do not pose a threat to the safety of their crews or to the marine environment. Since 1997 Maritime Rule Part 21.10(2) has required such vessels to enter the safe ship management system if they have operated in New Zealand waters for more then two years. The intent of this policy was to ensure that, over time, the safety and equipment standards of foreign chartered fishing vessels (FCFV), and the health and safety of their crews, would be progressively raised to a level similar to that of equivalent New Zealand registered fishing vessels.

Maritime New Zealand has recently reviewed this policy, particularly in light of some instances of very serious safety, operational and structural deficiencies which have resulted in detention of a number of FCFVs. Lack of safety equipment that would normally be required aboard an equivalent New Zealand fishing vessel has also, on at least one occasion, resulted in the death of a crew member of the FCFV.

Taking account of the above factors Maritime New Zealand is introducing a more rigorous inspection and compliance regime for FCFVs from 1 January 2007. FCFVs arriving in New Zealand for the first time after that date will be inspected upon arrival to the standard required by their flag State. Certificates of Recognition and MSA numbers will not be issued until satisfactory completion of this inspection. They will then be inspected by Maritime New Zealand staff every six months and, if they intend to remain in New Zealand waters for more than two years, will be required to progressively upgrade their safety equipment. Operators are encouraged to achieve compliance with local safety equipment standards as early as possible.

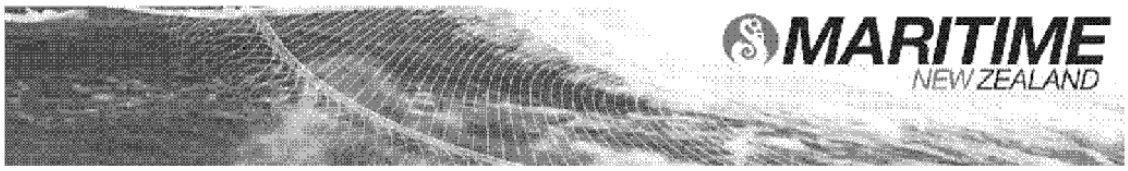
When they are surveyed at the end of that two year period to enter the safe ship management system, as required by Maritime Rule Part 21.10(2), they will be required to be equipped to a standard similar to that of an equivalent New Zealand fishing vessel. If the FCFV has not reached this standard they will not be able to meet the survey standards for entering the safe ship management system, and will not be able to continue their operation in New Zealand waters.

FCFVs already operating under the safe ship management system will be inspected at six monthly intervals from 1 January 2007 and will be required to meet the safety standard of an equivalent New Zealand fishing vessel by 1 January 2009.

This revised policy had the approval of the New Zealand fishing industry and is also referenced in the Code of Practice on Foreign Fishing Crew as agreed between the Department of Labour, the Seafood Industry Council, and the NZ Industry Guild Inc in October 2006.

Information and guidance on standards for New Zealand fishing vessels can be obtained from Safety Management Systems, Maritime New Zealand, on (04) 494 1225, or from the vessel's Safe Ship Management company.

Catherine Taylor
Director, Maritime New Zealand



Maritime Operations

FOREIGN CHARTERED FISHING VESSEL (FCFV) CHECKLIST – MAR MO 03

SECTION A – PART 1: SHIP DETAILS

To be completed for all ships.

Ship Name:		IMO Number:	
Former Names:		Official Number:	
Call Sign:		Flag:	
Owner		GRT:	
Manager		Year of Build:	
Charterer		Class Society:	
Inspection Date			
Inspection Port		Service Type:	

Type of Fish Factory (i.e. Full Fillet, Headed Gutted & Tailed, Fresher):

Certificates Valid:	☐ Yes	☐ No	Sub Standard:	☐ Yes	☐ No
	☐ Yes	☐ No	Ship Detained:	☐ Yes	☐ No
			Deficiencies:	☐ Yes	☐ No

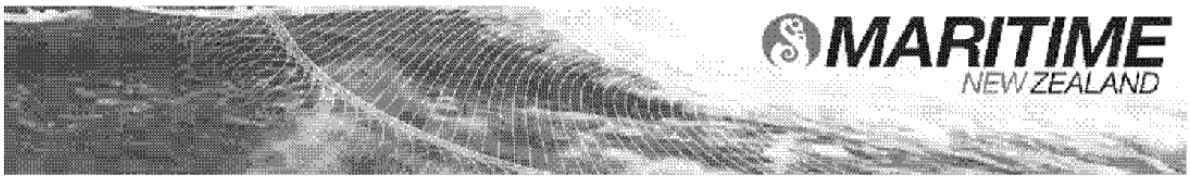
SECTION A – PART 2: SHIP CERTIFICATION

	Issued By	Issued	Expires	Last Survey		
				Date	Surveyed By	Place
01 Certificate of Class						
02 Certificate of Nationality						
03 Tonnage Certificate						
04 Safety Radio						
05 Safety Equipment						
06 Liferaft Service						
07 Fire Appliances Service						
08 Inflatable Lifejacket Service						
09 I.O.P.P.						
10 I.S.P.P.						

SECTION A – PART 3: DOCUMENTATION

Note: A ✓ should be placed against those applicable items which are inspected.

☐ Approved stability information
☐ Cargo Gear Record Book
☐ Record of Drills
☐ Garbage
☐ Oil Record Book
☐ Record of Equipment Tests



Maritime Operations

FOREIGN CHARTERED FISHING VESSEL (FCFV) CHECKLIST – MAR MO 03

SECTION B – CHECKLIST

Note: On completion, all areas **MUST** be marked with either a ✓, a **Code Letter** and/or a **Comment**.

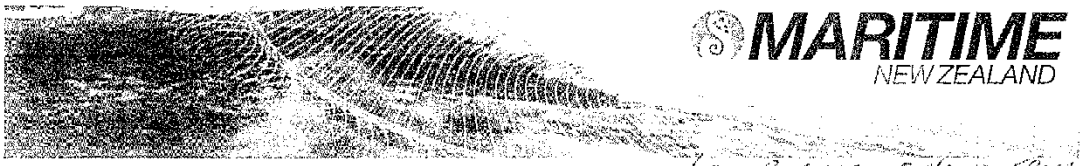
			Inspection Criteria
Area 1 – External Hull and Pre-Boarding			
1.1.	Hull Condition		Evidence of heavy corrosion or damage
1.2.	Tank Leakage		Evidence of any oil or water leakage from tanks
1.3.	Hull Markings		Load line and draft marks clearly visible
1.4.	Accommodation Ladder and Side Netting		Proper construction-fitting/guard rails or line properly secured with safety net
Area 2 – Wheelhouse			
2.1.	Magnetic Compass		
2.2.	Deviation Card		
2.3.	Gyro Compass		
2.4.	Echo Sounder		
2.5.	Radar		
2.6.	GPS		
2.7.	Charts		
2.8.	Publications – Nautical/Radio		
2.9.	Navigation Lights	Length < 50 metres	One Masthead /Sidelights/Stern Light
		Length > 50 metres	Two Masthead /Sidelights/Stern Light
2.10.	NUC/Aground Lights		All round / Red over Red
2.11.	Fishing Lights		Not Trawling: All round / Red over White Trawling: All round / Green over White Close proximity: Two all round Red and Two all round White, in a vertical line
2.12.	Anchor Light	Length < 50 metres	One all round white/most visible place
		Length > 50 metres	Two all round white/aft light lower than forward
2.13.	All lights		
2.14.	Day Shapes		
2.15.	Whistle		
2.16.	Fog Signal		
2.17.	Bell		
2.18.	VHF Radio		
2.19.	SSB Radio		
2.20.	EPIRB/Hydrostatic Release		
2.21.	SART		
2.22.	Pyrotechnics		
2.23.	Line Throwing Apparatus		
2.24.	Man Overboard Lifebuoy/Pyrotechnics		
2.25.	Alarm Bell system for Fire, Abandon Ship and Emergency		Must work. Bell codes for Fire/Abandon Ship and Rescue Boat must be clearly displayed
Area 3 – Accommodation/Catering			
3.1.	Muster and Emergency Station List		Must be available and in correct positions
3.2.	Passage ways and exits/access		No Obstructions
3.3.	Porthole closing arrangement		Must close/ watertight (test)
3.4.	Weather tight/watertight doors		Must close/all dogs-catches must operate and move freely
3.5.	Medical Stores		Must be available sighted and up to date
3.6.	Electric wiring and switches		No un-authorised wiring – exposed heaters etc. Lights in cabins permanently fitted and wired. No overloaded power points
3.7.	Cleanliness / Hygiene		No infested areas
3.8.	Storerooms / Freezer		Cleanliness. Alarm Functioning
3.9.	Garbage		Garbage Containers fitted with lids
3.10.	Galley		Acceptable standard of Hygiene in galley. Fire Blanket
3.11.	Signage		Warning notices and signs displayed where required

SECTION B – CHECKLIST

Note: On completion, all areas **MUST** be marked with either a ✓, a **Code Letter** and/or a **Comment.**

		Inspection Criteria
Area 4 – Main Deck		
4.1.	Pilot boarding arrangements	Ladder in good condition/Bulwark stanchions fitted/safe access/Lifebuoy with light and line must be ready at boarding station
4.2.	Watertight doors / Hatches	Must close. Securing devices must work and move freely
4.3.	Ventilation flaps and covers	Must close. Securing devices must work and move freely
4.4.	Tank ventilation pipes	Closing devices in working condition/gauges must be clear
4.5.	Freeing ports	No closing devices fitted/no obstructions
4.6.	Cargo Hatches	Must close watertight. Securing devices must work and move freely
4.7.	Mast / Mast ladders	In good condition / no steps missing / not loose
4.8.	Derricks – if fitted	In good working order and condition/ Note SWL marked
4.9.	Rigging	Good condition / no excessive rust formation
4.10.	Shackles	Good condition
4.11.	Anchor Windlass	Both sides in good working condition and order. Must be able to drop freely
4.12.	Anchors and Cables	Good condition / no excessive rust / no wastage of links permitted
4.13.	Stowage of Gas Cylinders	Stowage on deck or in well ventilated lockers / good lashing materials / properly lashed
4.14.	Trawl Ramp Door	Fully Functional
Area 5 – Lifesaving Equipment		
Crew must demonstrate working order as requested by the Inspector		
5.1.	Lifeboats	In good condition properly maintained. Equipment in good condition and as per list. Pyrotechnics in date. Motor starts
5.2.	Launching Arrangements	In good condition and fully operational
5.3.	Liferafts	In date. Hydrostatic release in date and correctly fitted
5.4.	Lifebuoys	In good condition with retroreflective tape and grablines
5.5.	Lifebuoy lights	Self-igniting light must operate
5.6.	Lifebuoy lines	Lines 30m in length/minimum 5mm diameter
5.7.	Rescue Boat	Fully operational
Area 6 – Fire Fighting Appliances (Accommodation / Deck / Engineroom)		
Crew must demonstrate working order as requested by the Inspector		
6.1.	Hydrants	Working order. No corrosion. Good coupling
6.2.	Hoses	No holes. Good coupling
6.3.	Nozzles	Both spray and jet option. Good coupling
6.4.	Portable extinguishers	Condition Service date. Condition
6.5.	Brackets for extinguishers	Must be installed and fitted with quick release
6.6.	Spare gas cylinder charges	Sufficient quantity
6.7.	Spare powder	Sufficient quantity
6.8.	Emergency Fire Pump	Fully operational
6.9.	Fire blanket for galley	Suitable size. Sound material. Located in galley
6.10.	Fire Axes	No rusty blade. Proper handle
6.11.	Fireman's Outfit	Fully operational and in good condition
6.12.	Breathing Apparatus	In good condition. No leaks. Bottles charged. Spare Air Bottles
6.13.	Fixed fire fighting extinguishing system	Condition. No obstructions. Last test date
6.14.	Alarm	Must work
Area 7 - Engineroom		
7.1.	Emergency Generator	In good condition/properly maintained. Must start and be able to be put on load. Black out test
7.2.	Emergency Compressor	In good condition/properly maintained. Must start
7.3.	Oily water Separator / Filtration system	Fully operational
7.4.	Cleanliness of Bilges	Clean. Must not present a fire hazard
7.5.	Emergency Escapes	Must be clear of all obstructions
7.6.	Main switch board	No earths on board clear of obstructions
7.7.	Fire pumps	In good condition/properly maintained
7.8.	Emergency Steering	Tested and fully operational
Area 8 - Factory		
8.1.	Walkways	Gratings in place
8.2.	Emergency Stops	Adequate and appropriate
8.3.	Total number of Emergency Stops	
8.4.	Machinery safe guards	Guards in place where appropriate
8.5.	Signage	Warning notices and signs displayed where required
8.6.	Fishmeal Plant	Emergency stops, Gas alarms, Dead Man alarms
8.7.	Fish Holds	Adequate hazard management in place for safe occupancy
8.8.	Personal Protective Equipment	Helmets, PFD's, Boots, Harnesses, Gloves, Wet Weather gear

Appendix 2



MARITIME NEW ZEALAND

Safety Management Systems NOTE CHANGE OF NAME FROM MARANUI NO PANTAS AIR 22/12/08

REPORT OF INSPECTION IN ACCORDANCE WITH FLAG STATE INSPECTION/SAFE SHIP MANAGEMENT – MAR SMS 108 OFFICIAL N°. 05/1001-6162008.

1. Name of Ship:	PANTAS AIR 1	2. MSA N°.	132015
3. Type of Ship:	FISHING	4. Fishing No. (If Applicable)	900740
5. Overall Length:	58.2 m	6. Tonnage:	278 GRT
7. Registered Length:		8. Engine Power:	1911 kW
9. Owners Name:	PANTAS CORPORATION		
10. Address:	RM 301, SAMHA BLDG. 394 DONG GWANG-DONG JUNG-GU BUSAN KOREA		
11. Date of Inspection:	25/01/07	12. Place of Inspection:	BLUFF

Relevant Certificates:

Title	Date Issued	Date Expires	Safe Ship Management Co.
Safe Ship Management Certificate:			
Safe Crewing Certificate: 38 PERSONS	4/11/2005	3/11/2010	KOREA.
Exemption Certificate:	11/11/06	17/2/2007	
KR CLASS CERT.	22/12/06	23/10/2010	BUSAN, KOREA.
Operating Limits:			

* EXPIRY INFORMATION.

MANNING AT THE TIME OF INSPECTION:

Name:	Qualification and Certificate Number:
JAE KYONG KIM	3RD CLASS DECK OFFICER. ENDORSED MASTER F.V. <6000 G/T BS-F2-05-0059
YONG SUB SIM	THIRD CLASS DECK OFFICER ENDORSED CHIEF MATE F.V. <6000 G/T BS-F3-05-023
MAN YONG SONG	THIRD CLASS ENGINEER OFFICER ENDORSED O/E <3000 KW BS-ES-01-0227 *
JEONG SANG-TAE.	FOURTH CLASS ENGINEER OFFICER ENDORSED O/E <1500 KW A/E <3000 KW BS-04-03-02

DEFICIENCIES:

Nature Of Deficiency	Deficiency Code	Action Code
CHIEF ENGINEER CERTIFICATE ENDORSED DEFICIENCY CLEARED.	210	04 (BEFORE BOARD)
INTRODUCE HAZARD ID REGISTER	014	RECTIFIED 01 DONE WHILST ON BOARD
GUARD HOG BLADE	756	07

District Office:

Telephone:

Fax:

M.S.I.:

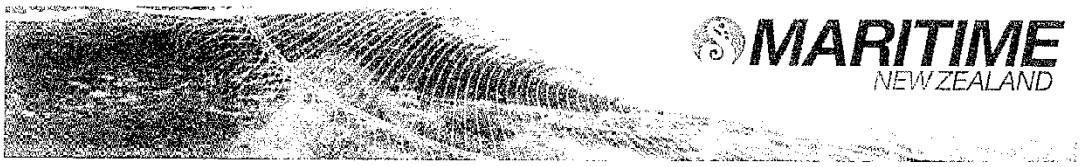
(Duly Authorised Inspector)

Signature:

Skipper/Owner:

(Print Name)

Signature:



MARITIME NEW ZEALAND

Safety Management Systems

SSM VESSEL SAFETY PROFILE – MAR SMS 109

GENERAL

Vessel Name: Paua No 1 Auditor: SSM Company: Lloyds

MSA Number: 132075 Location: Bluff Location: CH CH

GENERAL CONDITION

1. General Condition of Vessel
- ☐ Excellent appearance (0)
- ☐ Good appearance (2)
- ☑ Average appearance (4)
- ☐ Poor appearance (8)

4

2. System-Related Deficiencies / Corrective Action Raised at this Inspection/Audit
- ☑ Safety-related deficiencies (8)
- ☑ Document-related deficiencies (4)
- ☐ General deficiencies (6)
- ☐ No system-related deficiencies (0)

12

3. Deficiencies Raised at Previous Inspection
- ☑ Previous deficiencies raised and all closed out within agree timeframe and by agreed method (2)
- ☐ Previous deficiencies raised but not all closed out within agree timeframe and by agreed method (4)
- ☐ Previous deficiencies raised, some still outstanding (6)
- ☐ Previous deficiencies raised, all still outstanding (8)
- ☐ No deficiencies raised at previous inspection (0)

2

4. Awareness and Acceptance of Rules
- ☐ Owner and Skipper are aware of all applicable Maritime Rules and show acceptance and compliance of these rules (0)
- ☐ Owner and Skipper show awareness of all applicable Maritime Rules but show no evidence of acceptance or compliance (8)
- ☑ Owner and Skipper show no awareness of all applicable Maritime Rules (8)

8

SAFE SHIP MANAGEMENT

5. Awareness and Acceptance of SSM
- ☐ Excels in procedures and practices – owner self-audits and all personnel activity supports the system (0)
- ☑ Satisfactory level of awareness – supported by all personnel (2)
- ☐ Negative response to and acceptance of SSM – does not improve/maintain/ customise manual over time (8)
- ☐ Unsatisfactory (8)

2

* Too early to tell. Some improvement made.

6. Ship-Specific Manual
- ☐ All procedures, maintenance plans, training and hazard identification are specific to the vessel & being implemented (0)
- ☑ Some procedures, maintenance plans, training and hazard identification are specific to the vessel & partially implemented (4)
- ☐ The Manual is not ship-specific or a generic manual is on board (9)

4

7. Documentation
- ☐ Exceptional documentation – exceeds requirements (0)
- ☐ Good, tidy, well thought out and maintained (1)
- ☑ Average, but could be improved (3)
- ☐ Poor or untidy, various parts do not meet requirements or manual not tailored to the vessel (5)

3

11. OWNER REVIEW
- ☐ Owner conducts reviews of the system and evidence of continual improvement (0)
- ☐ Owner conducts reviews, but not verifying the effectiveness of systems (15)
- ☑ No reviews conducted, not verifying effectiveness of systems (20)

20

HEALTH AND SAFETY

8. Crew Participation and Training
- ☐ Owner has effective & Comprehensive training procedures & it's being implemented & recorded (0)
- ☐ Owner has effective & comprehensive training procedures but they are not being implement and recorded (8)
- ☐ No training procedures are in place or procedures are not effective & comprehensive (8)

8

9. Hazard Identification
- ☐ Very effective proactive identification and management of hazards (0)
- ☐ Regularly scheduled identification and management of hazards (2)
- ☑ Documented system for identifying and managing hazards – not being implemented (8)
- ☐ Hazard identification processes in place but not documented (6)
- ☑ No hazard identification process in place (10) But new introduced.

10

10. Accident Register
- ☐ Excellent system for recording accidents and incidents, clear evidence of lessons being learnt and acted upon (0)
- ☐ Good system for recording accidents & incidents, some evidence of lessons being learnt and acted upon (4)
- ☐ System in place to record accidents and incidents, but not evidence of lessons being learnt and acted upon (6)
- ☐ No system for recording accidents & incidents in place (8)
- ☑ Excellent system for recording accidents and incidents; has not been involved in any accidents or incidents (0)

0

Total: 67

MARITIME NEW ZEALAND

Safety Management Systems

SSM SHIPS AUDIT CHECKLIST – MAR SMS 106

To be used for initial and subsequent Ships Audits or Risk Assessments. NAME CHANGE.

GENERAL

Vessel Name: [illegible]

MSA Number: 132075

Auditee:

Location: BLUFF.

Auditee Rep.: [illegible]

Auditor:

Audit Type: INITIAL.

Date: 30 MARCH 2007.

Persons Present: [illegible] 25/01/07.

1 MARITIME DOCUMENTS

NOTE ISSUE & EXPIRY DATE WHERE APPLICABLE.

Item	Yes	No	NA	Comments
Is SSM Certificate displayed & current?	☐	☐	☑	OPERATING UNDER AN EXEMPTION INITIAL AUDIT.
Are any applicable conditions on the certificate contained in the SSM Manual with full explanation e.g. operating limitations, operating conditions, passenger numbers, etc.?	☐	☐	☑	
Is the MSA or Fishing Number displayed on the vessel?	☑	☐	☐	
Are copies of all relevant statutory documents held in the SSM Manual? E.g. CERTS. • Load Line Certificate • International Tonnage Certificate • Freeboard and Stability Information • Compass Certificate / Deviation Card • Radio License / Surveyors Compliance Statement [illegible] • Electrical Compliance Certificate • Minimum Crewing Document • Masters & Crew Qualification Certificates • Compliance certificates for Safety & Emergency Equipment (e.g. Fire Fighting Equipment, Liferafts, EPIRBs, etc.) NATIONAL AUDIT	☑	☐	☐	
If not, why not?	☐	☐	☐	
What action is to be taken and by whom? (CAR)	☐	☐	☐	

CERTS : ISSUED 23/12/06 TO 23/12/2010.
IOPP ISSUED 23/10/06. 23/10/2010. ANNUAL. 25/01/07.
A.R. [illegible], SYDNEY 25/01/07. — " —.

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2 SSM MANUAL

Item	Yes	No	NA	Comments
Is the Manual on board or readily available to the Master and crew? (If not, abandon Audit and reschedule.)	☑	☐	☐	
Is it complete, including all prior amendments/updates?	☑	☐	☐	
Has the system been reviewed by the Owner/Master?	☑	☐	☐	
Are amendments / updates required?	☑	☑	☐	MP 2482 10 – BUT INTRODUCED AT AUDIT.
If yes, have they been drafted by the Owner/Master?	☐	☐	☑	
If not, who is to do these?	☐	☐	☑	
If any of the above have not been done, what action is to be taken and by whom? (CAR)	☑	☐	☑	MASTER c/o.

3 MAINTENANCE PROGRAMME

Item	Yes	No	NA	Comments
Review the four-year Maintenance Programme as detailed in the SSM Manual.	☐	☐	☑	COMPUTERISED MAINTENANCE SYSTEM.
Audit the maintenance records / logs including reports and invoicing details of work done by shore-based support providers.	☐	☑	☐	MANY OF THESE RECORDS NOT HELD ON BOARD BUT BY OPERATOR
Do the maintenance logs record and confirm maintenance has been done as detailed in the maintenance programme?	☐	☐	☑	NOT SEEN.
Are the shore-based service providers those nominated as such in the SSM Manual?	☐	☐	☑	THROUGH OWNER/AGENT/CONTRACT.
If not, what records has the Owner/Master got as to how the supplier was selected and their competency established for the work they did?	☐	☐	☐	REPAIRS BOOKED CONTACTED BY OWNER/AGENT BEFORE SHIP ARRIVAL IN PORT TO MINIMISE DOWN TIME.
Random check by physical inspection or other means, confirmation that the documented work done was indeed done.	☐	☐	☐	SOME REPAIRS WITNESSED EG STEELWORK REPLACEMENT

3 MAINTENANCE PROGRAMME (continued)

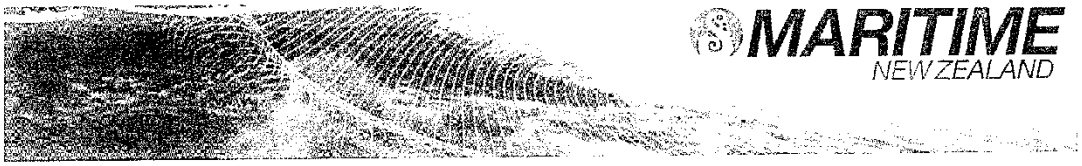
Item	Yes	No	NA	Comments
If any of the above have not been effectively completed, what action is to be taken and by whom? (CAR)	☐	☐	☐	

4 VESSEL LOG

Item	Yes	No	NA	Comments
Have the 'logs' been filled in and records maintained as required by the format of the 'logs'?	☑	☐	☐	
Is there evidence available that pre-trip procedures are complied with prior to every trip?	☑	☐	☐	
Are they complete to current date, covering all trips made (including non-commercial if appropriate i.e. private use, relocation for slipping or repair, training activities, etc.)?	☑	☐	☐	
Are training exercises, accidents, incidents, etc. recorded?	☑	☐	☐	EFFECTS BEING MADE.
Have accidents and incidents been reported to Maritime NZ and the SSM Company?	☐	☐	☑	NO ACCIDENTS TO DATE. BUT LOG AVAILABLE IN SSM MANUAL.
If not, why not?	☐	☐	☐	
What actions are to be taken and by whom? (CAR)	☐	☐	☐	

5 COMPETENCY CERTIFICATE

Item	Yes	No	NA	Comments
Do documented manning levels comply with the requirements of Maritime Rules?	☑	☐	☐	
Are copies of the Master's Certificates of Competency held in the SSM Manual?	☑	☐	☐	
Are copies of the Master's support competencies held in the SSM Manual? E.g. • Engineering Qualification • Radar Operators Qualification • Radio Operators Qualification • Current First Aid Certificate • Fire Fighting Certificate, etc.	☑	☐	☐	NOTES: C/E CERT REVALIDATED FOLLOWING DETENTION OF VESSEL. VESSEL RELEASED 8/2/07



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Safety Management Systems

SSM SHIPS AUDIT CHECKLIST – MAR SMS 106

5 COMPETENCY CERTIFICATE (continued)

Item	Yes	No	NA	Comments
Are copies of the Crew Competency Certificates held in the SSM Manual? E.g. • ADHFV or ADH • Engineering • Radio Operators Qualification • Current First Aid Certificate (not more than 4 years old), etc.	☑	☐	☐	
Have changes to nominated Master and Crew been recorded in the log?	☐	☐	☑	NO CHANGES AS YET.
Are copies of their Competency Certificates as above been filed in the SSM Manual? (If not, these will need to be supplied for Auditor confirmation.)	☑	☐	☐	HELD BY BOARD & INSPECTOR
What other actions for any non-compliance above are to be taken and by whom? (CAR)	☐	☐	☐	

6 SAFETY ISSUES

Item	Yes	No	NA	Comments
Are Safety / Hazard identification meetings being held?	☐	☐	☐	NOT FULLY IMPLEMENTED AS YET — CULTURAL CHANGE —
If not, why not? (CAR)	☐	☐	☐	

Note: Required by the Health and Safety in Employment Act. May be an informal discussion at a "coffee break" at any time. Does not have to be a formal meeting but notes should be kept in the SSM Manual.

If yes, have notes been taken of topics discussed and outcomes agreed?	☑	☐	☐	DISCUSSIONS WITH ALL OFFICERS AT TIME OF AUDIT.
Is a 'Hazard Register' being kept? (Should be filed in the SSM Manual.)	☑	☐	☐	JUST STARTED.
Does this include all items raised and discussed at Safety Meetings?	☐ ✓	☐	☐	MAJOR CULTURAL CHANGE.
If not, why not? (Required by Health and Safety in Employment Act.)	☐	☐	☐	

6 SAFETY ISSUES (continued)

Item	Yes	No	NA	Comments
Review contents of Hazard Register.	☑	☐	☐	CAN BE IMPROVED.

Note: Suggest possible hazardous situations or locations and explore / discuss with Master and Crew. Raise awareness of Occupational Hazards overlooked or discounted by Master and Crew due to historic acceptance, complacency, or "it won't happen to me" attitude.

Were any issues or hazards identified during this review?	☑	☑	☐	
If there are, what action is to be taken and by whom? (CAR)	☑	☐	☑	GUARD NOT BLADE.
What follow-up is planned to ensure compliance and by whom? (CAR)	☑	☐	☑	RE-VISIT VESSEL NEXT TIME IN PORT

7 ENVIRONMENTAL ISSUES

Item	Yes	No	NA	Comments
Review Environment Procedures in SSM Manual.	☑	☐	☐	
Are they adequate and encompass all aspects of environmental protection as related to the vessel and its operations?	☑	☐	☐	
Are they being practiced?	☑	☐	☐	
Are appropriate measures in place to address an oil or fuel spill?	☑	☐	☐	
Are black water (sewage) and grey water storage and disposal facilities appropriate?	☑	☐	☐	
Are they being used correctly and fully?	☑	☐	☐	
Does a Garbage Plan (vessels 15m or greater) exist or appropriate placarding fixed and displayed around the vessel?	☑	☐	☐	GARBAGE PLAN & INCINERATOR ON BOARD.
What issues have arisen from the above?	☐	☐	☑	
What action is to be taken and by whom? (CAR)	☐	☐	☑	

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Safety Management Systems

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8 COMMUNICATIONS

Item	Yes	No	NA	Comments
Review the Radio Reporting Schedule / Trip reports as detailed in the SSM Manual.	☑	☐	☐	Several Radio Systems. Comprehensive Communications.
Is it adequate / appropriate for the vessels operations?	☑	☐	☐	
Do the log records support that this schedule is being implemented?	☑	☐	☐	
If in doubt, verify with nominated shore base and its records.	☐	☐	☑	
If not being done, why not?	☐	☐	☐	
What actions are to be taken and by whom? (CAR)	☐	☐	☐	

9 TRAINING

Item	Yes	No	NA	Comments
Have Master, Crew and support staff been trained in the SSM Systems? (Test familiarity of all parties with the contents of the SSM Manual.)	☐	☐	☐	Not very well. Copies of safety manual but do not explain procedures or requirements.
Has this been recorded and acknowledged by the trainees in the training records kept in the SSM Manual?	☑	☐	☐	Training records kept.
Have emergency and safety drills (as below) been carried out as detailed in the SSM Manual?	☑	☐	☐	
Man overboard?	☐	☐	☐	Date last done:
Fire?	☑	☐	☐	Date last done: 13/03/07
Grounding?	☐	☐	☐	Date last done:
Structural Breach?	☐	☐	☐	Date last done:
Collision?	☐	☐	☐	Date last done:
Abandon Ship?	☑	☐	☐	Date last done: 13/03/07
Serious Accident or Illness?	☐	☐	☐	Date last done:
Other? (Note what) ______	☐	☐	☐	Date last done:

Appendix 3

MARITIME NEW ZEALAND

Maritime Operations

FCFV REPORT OF INSPECTION – MAR MO 131

GENERAL

Name of reporting authority:	Maritime New Zealand		
Name of Ship:		Call Sign:	DTBG 2
Date of Inspection:	10-10-08	Place of Inspection:	PORT NELSON
Maritime NZ Inspector:			

NATURE OF DEFICIENCY

This inspection may not have been comprehensive and the following list of deficiencies may not necessarily be exhaustive. In the event of a vessel being detained, it is recommended that a complete inspection is carried out and all defects rectified prior to an application for re-inspection.

No.	Corrective Action Report / Required Action
1	SWING MAGNETIC COMPASS - PRODUCE DEVIATION CARD (B4 DEP) *in hand*
2	08/09 NZ NAUTICAL ALMANAC REQUIRED - (BEFORE DEP) ✓
3	MOVE STORAGE DRUMS AWAY FROM EPIRB ACCESS (BEFORE DEP) ✓
4	FORE HATCH TIE DOWN INSIDE VESSEL SPACE - (BEFORE DEP) ✓ CHANGE DECK SYSTEM AT SURVEY NOV/DEC *to do.*
5	REPLACE 2x SPACE ~~406 FLOAT MONKEY ISLAND~~ (BEFORE DEP)
6	SERVICE GALLEY FIRE EXTINGUISHER (BEFORE DEP) ✓
5	PORT AFT FIRE BOX TO REPLACE (BEFORE DEP) ✓
8	TEST RUN AIR COMPRESSOR (BEFORE DEP) ✓
9	TEST RUN EMERGENCY FIRE PUMP (BEFORE DEP)
10	TEST EMERGENCY STEERING (BEFORE DEP)
11	FIT SAFETY CHAINS TO DERRICKS (BEFORE DEP) ✓
12	PRESENT LIFE JACKETS FOR CHECK (BEFORE DEP) ✓

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Recent Marine Occurrence Reports published by the Transport Accident Investigation Commission (most recent at top of list)

09-203	Report 09-203, jet boat, DRJS-11 grounding and subsequent rollover Dart River, near Glenorchy, 20 February 2009
08-203	Report 08-203, Passenger Ferry Monte Stello, Loss of Power, Tory Channel, 2 May 2008
08-207	Report 08-207, Commercial Jet Boat Kawarau Jet No. 6, Roll-Over, confulence of the Kawarau and Shotover Rivers, 25 September 2008
08-204	Report 08-204, 6-metre workboat Shikari, collision with moored vessel, Waikawa Bay, Queen Charlotte Sound, 20 June 2008
08-202	Report 08-202, coastal bulk carrier Anatoki and bulk carrier Lodestar Forest, collision, Tauranga Harbour roads, 28 April 2008
07-202	Report 07-202, fishing vessel Walara-K, flooding and sinking, 195 nautical miles off Cape Egmont, 7 March 2007
07-207	Report 07-207, Bulk carrier, Taharoa Express, Cargo shift and severe list 42 nautical miles southwest of Cape Egmont, 22 June 2007
08-201	Fishing charter vessel, *Pursuit*, grounding, Murimotu Island, North Cape (Otou), 13 April 2008
07-206	Report 07-206, tug Nautilus III and barge Kimihia, barge capsize while under tow, Wellington Harbour entrance, 14 April 2007
06-207	restricted limit passenger vessel, *Milford Sovereign*, engine failure and impact with rock wall, Milford Sound, 31 October 2006
06-204	fishing vessel "Kotuku", capsized, Foveaux Strait, 13 May 2006
07-201	charter catamaran, *Cruise Cat*, collision with navigational mark, Waikato River entrance, Lake Taupo, 22 February 2007
06-208	fishing vessel *Santa Maria II*, engine room fire, L'Esperance Rock, Kermadec Islands, 10 December 2006
05-212	restricted limit passenger vessel Milford Sovereign, loss of directional control, Milford Incorporating Sound, 20 November 2005 incorporating:

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