QUEENSLAND COURTS

CORONERS COURT OF QUEENSLAND

FINDINGS OF INQUEST

CITATION:	**Inquest into the death of Julian Werner Wlodarczyk**
TITLE OF COURT:	Coroners Court
JURISDICTION:	Cairns
FILE NO(s):	2013/1511
DELIVERED ON:	4 October 2017
DELIVERED AT:	Cairns
HEARING DATES:	23 June 2015, 25 August 2015, 17 November 2015, 15 February 2016
FINDINGS OF:	Kevin Priestly, Northern Coroner
CATCHWORDS:	CORONERS: Drowning; car overboard; cable cross river ferry; containment; safety management systems and regulator oversight
REPRESENTATION:	
Counsel Assisting:	Ms Jesika Franco
Sirron Enterprises P/L	Mr Christopher Ryall instructed by Ms Adrienne Calahan, Brian White and Associates.
Australian Maritime Safety Authority:	Mr Tim Foley
Maritime Safety Queensland:	Ms Katharine Philp, Tress Cox Lawyers Brisbane instructed by Marina Boyle, TMR.

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Introduction

At about 11.30pm on 29 April 2013 Mr Julian Wlodarczyk left a friend's house at Cow Bay to return home to Mossman. On arriving at the northern bank of the Daintree River, he saw the Daintree vehicular ferry at the southern bank. Mr Wlodarczyk flashed the headlights to gain the attention of the ferry Master. It was after midnight when the ferry normally stops operation until 6am. The Master saw the headlights. He had already let his deckhand/traffic controller go home; but decided to return to the northern bank in case it was an emergency. On arrival, Mr Wlodarczyk drove his Camry sedan on-board in the middle lane in front of the wheelhouse, got out and went to the front of the Camry. There was a brief conversation interrupted by a heavy downpour of rain. Mr Wlodarczyk returned to his car, shortly afterwards started it and drove forward. The ferry was about 20m away from the southern bank. The car continued forward, off the ramp and into the water. Mr Wlodarczyk drowned. His body was recovered a few hours later.

A coroner is required to investigate and make findings about who died, when the person died, where the person died, how the person died and what caused the person to die. A coroner must not include in the findings any statement that a person is or may be guilty of an offence or civilly liable for something. Further, a Coroner is empowered at inquest to make comments or recommendations to help prevent deaths from similar circumstances happening in the future.

The coronial investigation started immediately on the death of Mr Wlodarczyk. Police attended and conducted a scene investigation, establishing what happened. An autopsy was conducted to establish the medical cause of death. So, in one sense, there was sufficient information to make most of the required findings; who, when, where, how and what caused the death. However, the incident happened in the context of safety standards within a regulatory environment. Therefore, the required findings about 'how' Mr Wlodarczyk died gives rise to a need to explore if there were any missed opportunities in that context for a better outcome.

The coronial investigation including inquest considered and explored:

- The incident in more detail;
- The findings of initial investigations;
- The likely immediate contributors;
- The ferry design relevant to traffic management and containment;
- On-board operations relevant to traffic management and containment;
- External inspections during operations;
- Post incident modification to ferry and changes to operations;

- The broader regulatory response;
- Lessons from previous incidents;
- Improvements in on-board safety management;
- The roles of MSQ/AMSA and Douglas Shire Council vis-à-vis improvements.

Background

Mr Wlodarczyk was 62 years of age, a long term resident of the Mossman area, and had used the ferry on many occasions, including earlier that day. He was driving a 1993 white Toyota Camry sedan with automatic transmission and manual window winders.

The Daintree River flows in a generally easterly direction to the coast. The Cape Tribulation Road is generally aligned north - south. The ferry provides vehicular access across the Daintree River for traffic on the Cape Tribulation Road.

The ferry was designed to allow roll-on roll-off loading of 27 cars for carriage between the south and north banks of the Daintree River. The ferry was designed by naval architect, Richard Stewart, and built by English Engineering Pty Ltd. The ferry was launched and commenced service late in 2006. It is of steel construction, 43.2 metres long, 12.0 metres wide and 1.5 metres deep. It is 230 gross tonnes and registered in Class 1 E of the Uniform Shipping law Code (USL). The ferry is powered by an 85.8 kilowatt Cummins diesel engine which drives a series of rollers through which runs a steel cable attached to each bank. The wheelhouse contains controls for the cable power, loading ramps and redundant hydraulic boom gates. It has a flat vehicle deck with loading ramps at each end. There are signs advising persons to remain in their vehicles; turn the motor off, engage the hand brake and follow the directions of the traffic controller.

Sirron Enterprises (QLD) Pty Ltd (Sirron) was and remains the owner of the ferry. Mr Christopher Norris and Ms Charmaine Norris are its directors. Mr Norris is also responsible for the day to day running of the ferry and performs most of the maintenance. He is the holder of a Restricted Master Class 5 Certificate of Competency.

Douglas Shire Council is the local government authority responsible for providing the ferry service across the Daintree River. After a tender process it awarded a contract to Sirron to provide a ferry service from 1st July 2006 to 30th June 2016. That contract was extended or renewed in 2016. The Douglas Shire Council was amalgamated into the Cairns Regional Council in 2008 and de-amalgamated in 2014.

Maritime Safety Queensland (MSQ) was the regulator responsible for the oversight of compliance with standards for design, construction and operation of vehicle ferries in Queensland at the time of this incident. However, on 1 July 2013 the *Marine Safety (Domestic Commercial Vessel) National Law Act 2012* was introduced which provides a national legislative framework for commercial vessels operating in all states and territories.

The Incident

At about midday on 29 April 2013, Mr Wlodarczyk and a friend Mr Nutley drove from Mossman to Cairns in Mr Wlodarczyk's Camry. They spent the day in Cairns and returned, travelling to Cow Bay, crossing the Daintree River on the ferry at about 7.30pm. Mr Wlodarczyk drank two beers during the trip. During the crossing from the southern to northern bank, Mr Wlodarczyk got out of his vehicle and chatted with the Ferry Master, William Smith. They knew each other. Working with Mr Smith was Mr Bacher, the Traffic Controller.

Mr Wlodarczyk travelled to Mr Nutley's house where he watched a DVD, consumed two cans of rum and cola, and smoked a small amount of cannabis. It appears Mr Wlodarczyk was experiencing difficulties with his car that day and while at Mr Nutley's, he left the bonnet up and it rained heavily.

At about 11:20pm Mr Wlodarczyk left Mr Nutley's house and drove to the ferry. Normally, the ferry stops operation at midnight and resumes at 6am.

At about 11:55pm Mr Bacher lowered the steel boom gates at the north bank and the ferry travelled to the south bank to shut down for the night. Mr Smith told Mr Bacher to finish for the night. Mr Bacher did so, lowering the boom gate on the south bank before getting into his car and driving off.

Based on the account of Mr Smith to police, he remained on the ferry to finish up. At about 12:05am, he saw a car on the north bank flashing its headlights. Mr Smith thought that it might be an emergency. He started the ferry and travelled to the north bank. He saw Mr Wlodarczyk with the bonnet of his vehicle raised and checking beneath with a cigarette lighter. Mr Wlodarczyk then got back into his car and drove onto the ferry, stopping in the middle lane roughly in front of the wheelhouse. As the car boarded, the headlights appeared to turn on and off a number of times. In the absence of the Traffic Controller, the ropes and bollards normally used to manage traffic were not used.

Mr Wlodarczyk got out of his car, checked the front section and said to Mr Smith something like, “you would not believe the trouble I have had with this car”. Mr Smith yelled out words to the effect that the southern boom gates were closed and he would have to open them.

It started to rain heavily. Mr Smith began closing the glass windows in the wheelhouse and mopping up rain. Mr Wlodarczyk returned to his car, started it and drove slowly forward. On noticing the car move, Mr Smith tried to get Mr Wlodarczyk’s attention; yelling through the public address system, lifting the ramp and blasting the horn. The car continued up and over the ramp into the Daintree River about 20 meters from the south bank. Mr Smith stopped the ferry, grabbed a torch and ran from the wheelhouse. He dropped and broke his mobile phone on the way out. Mr Smith saw the car sink and threw a life buoy to the spot where he saw it sink. He returned to the wheelhouse, used the marine radio to call and alert Cairns Vessel Traffic Services (VTS) about the incident, and through them, the Water Police.

Two fishermen downstream heard the PA system and one, Mr Cashen, got into his vehicle and drove to the ferry. By that stage, Mr Smith was in a dinghy and he asked Mr Cashen to go to the ferry house nearby and wake Mr Christopher Norris, which he did. Mr Norris arrived, and he and Mr Smith used an anchor to try to hook the submerged car. Eventually, it was located and the line secured to the ferry.

Initial Investigations

Police

Mossman Police were advised of this incident at 1:30am and attended the scene. On arrival, the Camry was still submerged. Queensland Fire Emergency Service, Queensland Ambulance Service, and the State Emergency Service were present; attempting to retrieve it. The Camry was winched from the water using a tow truck and held in position by a steel cable to ensure it didn’t slip down the ramp. The water was drained. Sgt Fisher from Cairns Forensic Crash Unit (FCU) examined the Camry and found Mr Wlodarczyk on the passenger side with the upper part of his right hand caught between the door and the frame. The keys were in the ignition and in the “on” position. The transmission selector lever (centre console) was in the neutral position. Police found a canister with a quantity of loose green leafy material, consistent in appearance with cannabis, in the vehicle. The vehicle was damaged by the incident and rescue efforts. There was a large dent in the roof that extended for almost its entire length and breadth. There was damage to the front and passenger side, and damage to the front guard where the vehicle was hooked with the anchor. There was mud throughout

the interior and on the exterior. Police report that at the time of this incident it was raining heavily and near high tide.

A Vehicle Inspection Officer from the QPS, later conducted a mechanical inspection of the Camry and found no defects that might have contributed to the incident. However, the Inspection Officer was unable to run and test the engine due to immersion.

Mr Nutley told police that he didn't recall any issues with the car. However, during the drive back from Cairns, it was raining and there were issues with the windscreen fogging up and the demister not clearing it.

CCTV on the ferry captured the movement of Mr Wlodarczyk's vehicle. The time line of events is informative and summarised as follows:

00:01:30	Vehicle boards ferry, with headlights on and comes to a stop in the middle of the ferry.
00:01:45	Headlights and tail lights turn off.
00:01:59	Drivers door opens and driver exits, stands in the door way and then walks to front drivers side.
00:02:11	It begins to rain, driver returns to his car, gets into the driver's seat, but leaves door open.
00:02:33	Driver's door closes.
00:02:37	All vehicle lights come on.
00:02;45	All vehicle lights go off.
00:03:03	Master closes louvres on wheel house.
00:03:11	All vehicle lights come on.
00:03:13	All vehicle lights go off.
00:03:13	Master still preparing to terminate his shift.
00:03:43	All vehicle lights come on.
00:03:48	All vehicle lights go off.
00:03:52	Vehicle tail lights come on.
00:03:54	Vehicles headlights come on.
00:03:58	Vehicle starts driving forward. Vehicles brake lights appear to be on. The interior brake light can also be seen through back windscreen.
00:04:18	Vehicle veers to the right.
00:04:22	Vehicle goes over the side of the ramp and bobs in the water.

Autopsy

On Thursday 2 May 2013 Dr Paull Botterill conduced an autopsy and reported that death was due to drowning/ immersion due to multiple drug (methamphetamine, diazepam, codeine, cannabis) intoxication against a background of coronary artery atheroma and obesity. He reported:

> In plain terms, post mortem examination showed a markedly enlarged heart with a severely narrowed coronary artery, an excess of fluid in the lungs with scarring, a non-cancerous lump of the thyroid gland, enlargement of the bladder and prostate. No significant injuries were identified, notwithstanding that some of the lung changes may reflect consequences of drowning.
>
> In my opinion, at the time of autopsy, the cause of death was most probably drowning following immersion in a vehicle, although the presence of significant heart enlargement and coronary artery disease raised the possibility of a cardiac event leading to the drowning incident. The possibility of concurrent alcohol and/or other drug toxicity could not be completely excluded at the time of autopsy examination. Further investigations were subsequently performed. Microscopic examination showed heart artery narrowing, lung congestion, liver fatty change and features in keeping with past viral infection, and some kidney scarring. Testing for drugs and poisons showed the presence of a stimulant (methylamphetamine and metabolite), a hypnotic sedative (diazepam and metabolite), a pain killer (codeine), and cannabis metabolites. Although the remaining medications were at blood levels below the reported respective toxic ranges, the blood methyl-amphetamine level was in the reported potentially lethal range. No alcohol was detected in blood or other tested bodily fluids.
>
> Considering the described behaviour prior to the incident, it is difficult to say that stimulant toxicity of itself was necessarily the cause of the incident leading to the drowning, but cardiac arrhythmia either through methylamphetamine intoxication and/or coronary artery atheroma remains the most likely precipitant.

Forensic Medicine

Dr Gary Hall, Forensic Medical Officer, was asked to provide an opinion about the likely drug levels and impact on Mr Wlodarczyk. He reported:

> Interpretation of post-mortem blood levels of amphetamine, methylamphetamine and THC (cannabis) is difficult because of possible issues with post-mortem redistribution of these drugs which can result in much larger levels being present post mortem which

do not accurately reflect the circulating levels of these drugs immediately before death due to the process of the drugs dissolving out of tissues into the blood.

He further reported:

> It is therefore difficult to state with any degree of certainty whether the drugs found in the femoral blood at autopsy could have affected or impaired the deceased's ability to control a motor vehicle at the time of the incident especially if he had a long history of drug use and developed tolerance to the effects of these drugs.

Analysis and Conclusion

There are a number of factors that potentially contributed to the incident.

1. Although Mr Wlodarczyk was experiencing difficulties with his car, they don't appear to have had a direct impact. It is more likely the difficulties contributed indirectly in that he was anxious to get home before the difficulties became more serious.
2. Environmental conditions likely contributed to the incident. It was raining heavily. In addition to affecting his visibility, the noise of the rain on the deck of the ferry may have affected his hearing of noises associated with the movement of the ferry such as the slowing of the engine and feel associated with its movement as it neared the bank.
3. Mr Wlodarczyk was affected by drugs. Although investigated, neither the Forensic Pathologist nor Forensic Medical Officer was able to quantify the nature and extent of any impact of the drugs on Mr Wlodarczyk. Nonetheless, it remains likely his cognitive functioning, and hence his judgement about whether the ferry had reached the bank, was impaired. While the extent of his impairment is unknown, the methyl-amphetamine level was high suggesting a significant level of impairment.
4. Finally, there is the possibility that after starting and moving forward to better position the car in anticipation of the ferry reaching the bank, a pre-existing medical condition incapacitated Mr Wlodarczyk sufficiently to deprive him of the power to stop the car.

From a broader safety perspective, it does not matter whether the incident was due, for example: to diminished cognitive functioning in challenging circumstances, possibly partly due to drug intoxication; or to medical incapacity; or wholly drug intoxication. In the context of a vehicle ferry, the issue is what measures were in place to prevent vehicles going overboard. When the issue is framed from a safety management perspective in this way, there are implications for the design of the ferry, operational procedures and regulatory oversight, particularly if there had been other like occurrences from which lessons should have been learnt in each of these areas.

Ferry Design

In late 2004 or early 2005 Sirron commissioned naval architect, Mr Richard Stewart, to design a new ferry. He designed the then operating Daintree ferry. In a statement to MSQ dated 20 June 2013, Mr Stewart said he prepared a construction specification with a requirement for chains, cables or other barriers to be installed on the ends of the vehicle deck. Further, he prepared a general arrangement drawing which showed a traffic barrier required at each end of the vessel. Mr Stewart said this requirement was specified to comply with the Uniform Shipping Laws Code (USL) but the USL does not specify any standard to which the barriers were to be constructed. Mr Stewart was of the view, in order to comply with the USL code, the ferry had to be fitted with substantial chain on each end of the ramps to make drivers aware of a barrier and to provide some indication if they collided with a chain that there was a barrier in place. He believed a chain satisfied this requirement. Mr Stewart also said the ramps were designed to be elevated to an angle of 10 to 15° which also provided a degree of safety for vehicles when the ramps were fully raised.

In February 2006, Mr Stewart completed a Certificate of Compliance for Design and submitted that certificate, with all referenced design documents, to MSQ. During construction, Mr Stewart made periodic inspections on progress to ensure the physical build matched the plans and specifications. He issued further Certificates of Compliance that were submitted to MSQ on completion of construction and before the ferry started operating. The last of these certificates was issued on 2 October 2006 following an inspection on 28 September 2006. Of the many items checked, Mr Stewart reported he found a suitable barrier was fitted at either end of the vessel consisting of a substantial chain. However, it appears Mr Stewart must be mistaken on this point.

On 29 September 2006 the ferry was launched at Cairns and towed to the Daintree River.

Ferry Operations

Mr Norris says the ferry was never fitted with substantial chains and produced photographs of the final build stage showing work on the front ramp area as completed, including painting. There was no mechanism fitted to accommodate a substantial steel chain or stanchions to hold up a chain across the deck. Mr Norris said a heavy chain approximately 12 metres long suspended without support above the deck was not practicable.

There is overwhelming evidence that remotely operated hydraulic booms were fitted shortly after the ferry started in operation. For the few weeks before the booms were installed and made operational, the ferry used the same method as the earlier operator, ropes supported

from plastic bollards placed across the opening. I also note the contact between Douglas Shire Council and Sirron required the fitting of 'remote traffic control barriers' (Schedule 4).

The hydraulic booms were designed and fitted to be operated locally or remotely (from the wheelhouse). A full set of hydraulic controls were fitted in the wheelhouse to enable the Master to lower and extend the booms forming a physical and visual barrier across the loading ramps. There were local controls fitted at each ramp. The design involved booms that were telescopically extended to meet in the centre of the ramp. The booms were constructed of steel and measured 75 mm in width at the base and 45 mm at the telescopic end. I note that although the barriers provided a visual and physical barrier to drivers, they were not robust enough to withstand impact from an uncontrolled vehicle and contain it to the ferry deck.

However, Sirron decided to discontinue the use of the booms due to the risk of injury to deckhands and potential for damage to vehicles. Mr Norris said the hydraulic booms were not manufactured to stop vehicles from going overboard, rather they were intended to be used only as a visual guide to vehicles similar to the rope and bollard system. At some later point, the hydraulic booms were removed.

Mr Jack, a long serving deckhand with the former ferry operator and then with Mr Norris, confirmed to the court that there was no chain fitted across the openings to the ramps and that they used ropes and bollards from the old ferry. He also told the court that the boom gates that were installed never worked properly and were too flimsy. They would never have held something because they didn't lock together in the middle when closed.

Mr Heinson, another former crew member, gave evidence about the use of the ropes and bollards. In his experience, they were more for signalling and directing traffic during loading and unloading. Sometimes, drivers would move too soon and the rope would slide over the car. The boom gates stopped traffic from moving. It was the prospect of damage to the vehicle that stopped traffic, 'it would get their attention'.

External Oversight of the Ferry

From the start of operation of the new ferry, there were occasions when marine surveyors and MSQ officers attended and inspected the ferry. To some extent, dependent on the purpose of the inspection, each might have been an opportunity to identify the adequacy of the barriers across the openings at the ramps.

Records from MSQ show that the ferry was subject to ship safety monitoring by way of visits from Marine Safety Officers prior to 30 April 2013. In addition, Marine Surveyors attended on two occasions.

On 4 November 2007 Mr Jim Wort, accredited surveyor, inspected the ferry for the purpose of survey for a load line certificate. Mr Stewart originally provided a load line certificate but later queried the validity of his own calculations in the course of a dispute with Mr and Mrs Norris. It was resolved that a further load line certificate be provided. Mr Wort was engaged for this purpose. Amongst the many matters addressed, Mr Wort commented, "openings at each end of the ramp is fitted with substantial steel chain (portable) to allow vehicles on and off the vessel". A load line certificate subsequently issued. Again, this assertion must be mistaken as there are photographs showing the ferry in operation prior to that date which do not show any substantial chains fitted across the opening of the loading ramps. When later preparing his report and associated documentation as well as considering the many items that need to be addressed in the course of considering a load line certificate, Mr Wort apparently assumed compliance without an actual recollection of seeing the chain. Although Mr Wort was later interviewed by officers from MSQ and he maintained his view there was a substantial steel chain in place on the date of his inspection, I must conclude he maintained an erroneous recollection. More importantly for current purposes, I conclude that Mr Wort did not identify any deficiency in the way traffic was managed on the ferry using the rope and bollard system.

On 16 June 2009 MSQ Officer Mr Cowie conducted a routine ship monitoring inspection of the ferry and identified a number of matters requiring attention including: improved record-keeping, fuel emergency shutoffs and the bilge pumping manifold to be labelled, minor leaks in the engine room to be repaired, fire hoses to be fitted with the correct nozzle, a toilet to be removed (operating in a nil discharge area), procedures manual to be updated, and oil response kit to be upgraded. Mr Cowie checked the registration certificate and load line certificate. He did not make any notes regarding the traffic barriers.

In July 2009 a complaint was made to Workplace Health and Safety about aspects of the operation of the Daintree Ferry. A copy of the complaint was forwarded to MSQ. One of the allegations was the boom gates were not operational. There was a meeting between representatives of Workplace Health and Safety, Cairns Regional Council and the Environmental Protection Agency; each of the agencies with an interest in the matters that were the subject of the complaints. The issue about the boom gates not in operation was to be followed up by MSQ as the lead agency and by Cairns Regional Council. Cairns Regional Council recorded there was a discussion with the ferry operator about the use of existing

hydraulic gates. There was an agreement to either remove the gates or amend operating procedures to reflect the current use of ropes and bollards.

On 2 September 2009, MSQ Officers Mr Vince and Mr Kevin Schindler, conducted an inspection of the ferry operation. The visit was in response to the complaint as well as for the purpose of routine ship safety monitoring. Mr Vince had been involved in the initial registration process and checked that safety issues identified by Mr Cowie in the June 2009 visit were being addressed. He made no specific observations regarding traffic barriers. He later reported to MSQ in statement after this incident:

> "I cannot say that I have ever specifically looked for or checked any requirements for a barrier on the ferry. I think I made an assumption that the ramps when elevated constituted any barrier that may have been required."

Mr Schindler took notes during the inspection and recorded "to be fitted hydraulic boom gates to be upgraded and put back in service". Mr Schindler recalls speaking to Mr Norris regarding the inoperable hydraulic boom gates fitted to the ferry. Mr Norris told him he had spoken to Mr Tim Smith from Cairns Regional Council regarding the boom gates and was intending to commence work to return the gates to operational use in four weeks.

Clearly, there is a difference between the witnesses about the status of the boom gates and the suggestion of a return to use. I don't need to resolve that difference. It is sufficient to note the discussion about the type of traffic barrier as between rope and bollards or booms addresses traffic management and not containment.

On 2 September 2009, MSQ Officer Mr Vince conducted an inspection of the ferry, principally for the purpose of checking that the matters identified by Mr Cowie were progressed, if not rectified. Mr Vince found that the required work was completed but additionally noted one or two other minor matters requiring attention. Mr Vince did not make any observations regarding the traffic barriers on the ferry and did not make any enquiries regarding the core requirements for any barriers on the ferry.

On 30 June 2010, MSQ Officer Mr Dorante inspected the ferry and found the ships documents were well presented and the ferry well operated and maintained. He saw the traffic controller using a system of ropes and bollards as traffic barriers. He recalled a conversation with Mr Norris and was satisfied with the explanation that drivers were required to stay in their vehicles, engines turned off with the handbrake on and the vehicle either in park or in gear. Mr Dorante was satisfied with this arrangement given the sheltered area in which the ferry operated and

commented it would be different if the ferry was undergoing sea voyages. Mr Dorante reported seeing the traffic controller checking vehicles to ensure they were complying with his instructions.

On 11 January 2012, MSQ Officer Mr Dorante conducted a further ship safety monitoring inspection of the Daintree ferry. Again, he saw the same system of ropes and bollards was used as a traffic barrier in conjunction with a public address system to direct drivers to turn off engines and apply the park brake. Mr Dorante made no adverse comment regarding the system.

On 18 February 2013, an accredited a marine surveyor inspected the ferry for the purpose of renewing the load line certificate. The surveyor renewed the certificate. He was later questioned by MSQ Officers after this incident if there had been a chain or rope across the opening to the ferry. Initially he had no recollection stating that it was not something he would normally be concerned about as it was not a recognised safety feature. When later shown a photograph of the loading ramp with the rope and traffic cones in place, the surveyor acknowledged the arrangement was in place on the day he inspected the ferry. In fairness to the surveyor, who was not a witness in the inquest, he was attending the ferry for the purpose of renewing a load line certificate and his reference to “not a recognised safety feature” may be an oblique reference to an issue of interpretation of the Uniform Shipping Laws as to what exactly was required in this situation.

In his statement to MSQ, it is interesting to note the surveyor refers to hearing of another incident when a vehicle did drive off the previous ferry. He states, “whether the driver drove off the ferry or whether he drove into the water from the ramp I am not sure, but that must be over 15 years ago now and was some story I heard long ago. I’ve never been aware of any other incident where a vehicle may have driven off the ferry before it was safely secured to the concrete ramp”.

I observe that historically, the principal reason for the move from a prescriptive to a performance based approach to managing safety was the very fact that the prescriptive approach was no longer able to keep pace with the variety and complexity of hazards in different aspects of society. While the Uniform Shipping Laws provide an encyclopaedia of collective wisdom about standards associated with ship construction, these must be integrated with on-board operational procedures developed through a safety management system that addresses hazards associated with a particular operation. There are very few generic procedures any more.

Post Incident Changes

Following this incident, MSQ Officers attended the ferry and conducted an investigation. A direction was issued by an MSQ Officer to Mr Norris, based on a belief that the current system of ropes and bollards was inadequate, requiring:

- immediate installation of a minimum 8mm chain to be fitted at the fore and aft ramps of the ferry;
- installation of rigid physical barriers within four weeks; and
- the ramps of the vessel to be fully raised during river crossing.

In evidence, Mr Schindler explained that the ropes and bollards only provided a visual cue for traffic management and did not provide a containment barrier. He explained that the required barrier had to be sufficient to prevent a vehicle going overboard due to loss of control or a driver inadvertently driving forward. In response, Mr Norris, had steel gates fabricated and fitted at the openings. When the gates were closed, a chain was erected across the opening to support and reinforce the gates in the event of impact by a vehicle.

Mr Heinson recalled the day after this incident, he helped Mr Norris install heavy chain which was attached with D shackles and supported by plastic bollards. Mr Heinson thought the chain was sufficiently substantial to contain a vehicle. Mr Heinson also assisted in constructing and fitting the steel gates. In February 2015, a covert inspection of the ferry was conducted and revealed that the rigid physical barriers were in use and the ramps of the vessel were fully raised during the operation of the vessel.

Broader Regulatory Response

MSQ reports that immediately following this incident, it identified and inspected all other cable operated ferries in Queensland waters. These were identified as:

- Jardine River ferry
- Moggill ferry
- Bundaberg ferry
- Tewantin ferry

The Jardine River ferry is much smaller but was found without suitable traffic barriers. As a result a series of written directions were issued to the operators, Northern Peninsula Area Regional Council. The Council enlisted the assistance of a Marine Surveyor to rectify the issues. In the interim, a substantial chain was fitted to each loading ramp as a traffic barrier. It was reported the ferry lost a truck and a four wheel drive vehicle overboard two years earlier due to incorrect procedures being followed. In evidence, Mr Schindler provided further

information about these incidents. The truck, a large semi -trailer, boarded the ferry while it was not chained to the bank. As the truck moved forward, it pushed the ferry away from the bank and out from underneath it. The truck finished on the riverbed. The four wheel drive incident resulted from a brake failure. At the time, the Jardine ferry did not have any barriers in place at the opening.

MSQ reported the Moggill ferry was inspected on 15th May 2013 and found to be deficient in a number of areas mostly focussing on written procedures and documentation. The loading ramps themselves provide a traffic barrier, however a boom gate with a stop sign was also fitted, more as a visual cue for drivers during loading and unloading.

MSQ reported the Bundaberg cable ferry was privately operated for movement of vehicles carrying sugar cane. The operators ensured all trucks were securely chained to the deck of the ferry before it commenced movement. There were no deficiencies with the SMS or other documentation.

Finally, MSQ reported the Tewantin cable ferry was inspected on the 9th May 2013. It used the loading ramp as the traffic barrier due to the large angle of lift achieved when the ramp was raised.

It is to the credit of MSQ that it immediately identified the potential for the application of lessons learnt from this incident and reviewed like operations that might benefit from an inspection.

Previous Incidents

Fatal incident 20 November 1998

Stephen Terry was a passenger in a car travelling across the Daintree River on the ferry. He got out of the car during the crossing and when the ferry reached the other bank, he returned to the car. As he opened the car door, it was struck by the dog trailer of a forward moving truck, causing him to fall under its wheels. He suffered fatal injury. At this time, the only crew on the ferry was the Master. Passengers were required to go to the wheelhouse to buy a ticket. There was no active traffic management when it came to loading and unloading. A problem had developed with drivers prematurely moving forward in anticipation of disembarking.

An inquest was held and findings were delivered, on 3 November 1999. A number of recommendations were made including a requirement for a second crew member to collect tickets and to manage traffic when loading and unloading. It was also recommended that a

system of traffic lights or a boom gate be installed at each end of the ferry to indicate when it was safe to embark and disembark. It was also recommended that pedestrians be separated from vehicles and a public address system be used to direct pedestrians to return to vehicles before traffic moved off the ferry.

The Maritime Division within the Department of Transport, the predecessor to MSQ, received a copy of the findings and recommendations on 13 December 1999. A further Maritime Division memorandum (dated 15 December 1999) recommended the Coroner's recommendations be implemented at the earliest opportunity. A meeting was held (memorandum dated 22 December 1999) between the Regional Harbour Master (Cairns), the ferry operator and the Douglas Shire Council to discuss the implementation of the Coroner's findings and resolved that the operator's compliance with recommendations be monitored regularly. The Douglas Shire Council wrote a letter dated 27 September 2000 to the Director General of the Department of Justice and Attorney General outlining the Council's response to the findings that included the report that a system of chain and plastic traffic sentinels was used to control loading and unloading under supervision of the crew.

Non-fatal incident 16 December 2000

On 16 December 2000, Mr Peter Mansfield prematurely drove through the rope barricade on the ferry and into the Daintree River approximately 6 metres from the shore ramp. There were no injuries to anyone however the vehicle sustained damage. The ferry was stopped and assistance given to Mr Mansfield. The incident occurred at 11.35 pm at night. The traffic controller had finished at 9pm in accordance with the safety management manual and was not present. The Master at the time was Alan Ross. He completed a marine incident report which was faxed to MSQ a division of Qld Transport. The matter was also reported by Neil Pese, then owner of the ferry, by fax to Mark Kelleher (Acting CEO of Douglas Shire Council) on 18 December 2000. MSQ referred the incident to Cairns Water Police for investigation on 20 December 2000. However, there is no record in MSQ of any follow up of that referral or investigation outcome.

After this incident, FCU investigator Sgt Fisher interviewed Mr Peter Mansfield and obtained a detailed account of the incident. Mr Mansfield was a veterinarian in Mossman and lived on the Cape Tribulation side of the Daintree River. He was called out one night between 10 and 11:30 PM. He drove onto the ferry and was the only vehicle on board. It was dark and raining heavily. As the ferry approached the southern bank, there was a car waiting with its headlights on high beam. With the heavy rain and headlights in his eyes, Mr Mansfield was unable to see much ahead. He watched the ferry approach the pylon he knew to be near the bank.

Mr Mansfield was experienced in taking the ferry at night time. When there was no deckhand on board, the Master generally remained at the controls in the wheelhouse. The only visual barrier was either a rope or chain across the front and rear openings. Mr Mansfield knew how to embark and disembark the ferry. The general procedure was that once the ferry stopped, the ramp was lowered into place on the bank, and he disembarked.

On this occasion, with the rain and headlights in his eyes, Mr Mansfield saw the pylon on his right hand side and the ferry stopped moving. He felt the ferry stop and heard the ramp go down and 'clunked' as the chains stopped lowering. Mr Mansfield believed the ferry was in place against the ramp and drove off the end of the ferry and into the river. He escaped his partially submerged vehicle by kicking out the passenger side door and swimming to the surface. Later, Mr Mansfield asked the Master about the ramp being lowered and the ferry stopping. The Master explained he couldn't see the southern bank so he stopped and lowered the ramp intending to sneak into the bank. Unfortunately Mr Mansfield didn't understand what he was doing.

This incident clearly demonstrates that there is a real risk, (notwithstanding procedures in place for traffic management), of a driver making an error of judgement and driving off the ferry before it reached the bank. If traffic management extended to include the concept of containment, the likely outcome would be a damaged vehicle, not a vehicle overboard.

Others

Mr Warren Jack, in his statement to MSQ, recalled that the old ferry had ramps that raised right up and cars weren't able to drive up them. He recalled one occasion when a woman turned around to tend her baby in the back seat and most likely knocked the car into gear. It moved up the inclined ramp and stalled because of the angle. Mr Jack reported no like incidents on the new ferry. I note it was probably fortunate the woman's car was only idling, not being deliberately driven forward. Mr Jack also reported experiencing a few problems with the ropes and bollards over the years. He said some cars just start to drive off once the ferry reached the bank before the ropes and bollards were moved clear. He said cars got tangled in the bollards and this made them stop. Mr Jack says he didn't report the incidents as he did not feel they were of great enough significance.

In evidence at the hearing, Mr Jack said he was not on the ferry when the December 2000 incident occurred with Mr Mansfield but heard about it a few days later. He couldn't recall specifically how, might have been about town in Mossman. He was also asked about the

incident with the lady and baby. Were there ropes and bollards in place then? Mr Jack said yes and explained that the rope just slid up and over the top of the car. He told the court that nothing changed after this incident, they continued using ropes and bollards. Mr Jack was asked about his knowledge of other incidents. He could only recall a few incidents of cars bumping into each other. He assumed a driver forgot to apply the park brake and when the ferry started moving, the car rolled into another.

Mr Warwick Healy, Ferry Master, provided a statement to MSQ in which he recalled the fitting of hydraulic boom gates but said they didn't function properly. "When the ferry was landing on the bank and throttling back, some cars didn't have their handbrake on and would roll forward into the booms and cause damage. They were a flimsy design and build and would not have stopped the vehicle, they were a telescopic boom from each side with flimsy metal."

It also interesting that Mr Healy considered it impossible for a vehicle to go up the ramps if ramps were fully raised. He also said that the failure of people to apply their handbrake concerned him although he was satisfied that a fully raised ramp was sufficient to prevent them rolling off the ferry. He says it was always a clear instruction the loading ramps were to be fully raised at all times the ferry was underway.

In evidence, Mr Heinson recalled hearing about an incident when a young driver, unfamiliar with the ferry, came onto the ferry and just kept driving. Someone told him to move as far forward as possible. He went too far. Mr Heinson was asked about his knowledge of any incidents of vehicle moving while the ferry was in operation. He said, "That kind of thing happened often. I mean, people just don't listen. You tell them to turn their engines off, put their handbrakes on, don't get out of the car. Everyone ignored you".

On-board Safety Management

The *Transport Operations (Marine Safety) Act 1994* (Qld) imposed a general safety obligation on owners, operators, masters and crew members of ships. Essentially, the general safety obligation provides that the owner and master of a ship must not operate the ship unless it is safe. A ship is safe if it is seaworthy, and is appropriately equipped and crewed, to meet the ordinary perils of the voyage on which the ship is proceeding or about to proceed.

In the MSQ Investigation Report, Mr Schindler explains:

> One method of demonstrating that safe operating policies, procedures, and risk management practices are being used is through the implementation of a Safety Management Systems (SMS). The SMS forms part of a suite of documentation required under the National Standard for Commercial Vessels Part E- Operational

> Practices. The SMS should address aspects such as ownership details, crewing arrangements, emergency and on board operations, procedures, safety inductions, training and drills for crews.
>
> The Daintree River Ferry had a Safety Management System in place at the time of the incident, this System was last checked by Marine Officer Tony Dorante on the 11th January 2012.
>
> The system was contained within the Commercial and Fishing Ships Operating Documents as supplied to Maritime Safety Queensland by the Queensland Police service. On review it appears these documents were based on a template distributed to industry by Maritime Safety Queensland. A number of sections within the documents have little relevance to the operation of the ferry.
>
> The documents also contain an Occupational Health and Safety Management System, the document contains a risk matrix and definitions but no documented risk assessment of workplace and operational risks and the controls placed on these risks is contained in the system.

He later continued:

> Significantly a large section is devoted to the risk hazard assessment process however no documented risk hazard assessment and the control steps for the ferry is included within the document.
>
> Had a thorough risk assessment process taken place then the flaws of the Traffic Barrier
>
> System may have been exposed and a more effective system introduced.

Mr Schindler listed the absence of a traffic barrier and lack of an effective risk assessment as, amongst several other factors, contributors to the incident.

On reviewing the operating documents from the ferry, it is clear that many standard shipboard procedures are addressed. However, there are two observations I make. Firstly, there is no suggestion on the face of the documents that the procedures were risk assessed, that is, the hazards associated with a procedure were identified, the risks assessed, and appropriate control measures selected and incorporated into a reviewed procedure. Secondly, there is no key document like a risk or hazard register that centrally lists all of the operational hazards and how they are addressed. The procedures that do exist, suggest mere documenting of how tasks are performed or ‘how we do things around here’ on the assumption that experience (albeit limited) dictates what is safe.

Some basic procedures are seriously ill conceived. For example, the ‘man overboard procedure’.

> The following procedure should be followed in a Man or Vehicle Overboard Event:

1. Shout Man or Vehicle Overboard
2. Immediately halt Ferry
3. Throw a lifebuoy over the side, upwind and close to the person without hitting him/her.
4. Dispatch Carly Float if required.
5. Post one or more lookouts to keep the person or vehicle insight at all times (with a spotlight if necessary)
6. CALL 000 OR USE VHF RADIO TO NOTIFY EMERGENCY SERVICES
7. Notify ferry house occupants & ticket booth if operational.
8. Indicate to the person in the water that he/she has been seen and recovery action is being taken.
9. If person cannot be reached from ferry deck, employ ferry tender to aid recovery.

One immediate observation I make is the procedure contemplates the possibility of a vehicle overboard!

In evidence, Mr Jack told the court that there was a man overboard procedure and it was regularly drilled. However, when asked about the drill, he recited a standard man overboard procedure for a conscious person. It became evident that the ferry was not equipped to address the possibility of an unconscious person overboard. For example, a person who is rendered unconscious before entering the water. There was no tender (dinghy) on-board the ferry to assist in retrieval. The ferry has very limited capacity to move about to effect a retrieval, particularly since is operates across any current. The operation is reliant on raising the alarm with the shore base and a person being available to access a dinghy on the bank to rescue the unconscious person from the river. That procedure is hardly adequate. More importantly, this reflects poorly on the hazard identification and risk assessment process. What could happen and how to respond? This shortcoming was not noticed by MSQ Officers during routine ship safety inspections.

More relevantly, the rope and bollard system is documented as follows:

The bollard & rope system is designed to control and direct the flow of vehicular traffic into the appropriate lane whilst loading and unloading the ferry.

The typical bollard & rope system operation procedure shall be as follows:

1. Master - verbal radio instruction to traffic controller to commence loading.
2. Traffic Controller - to ensure all pedestrian and vehicular traffic are well clear before loading commences.

3. Traffic Controller to release rope & move bollard of specific lane to commence loading.
4. Once lane loaded close lane by replacing bollard & rope.
5. Continuing procedure steps 3 & 4 in each lane until ferry is loaded/unloaded.
7. Master to sound horn or contact traffic controller via UHF radio if dangerous situation arises to alert traffic controller and stop loading until problem is rectified.
8. Ropes and bollards to remain in the closed position at all times once ferry has left the shore unless in emergency situations when vehicles are required to exit immediately on landing. Deckhand/Traffic Controller to direct traffic in a controlled manner to exit vehicles as quickly & safely as possible.

Mr Norris was firmly of the view that if Mr Smith had complied with this procedure, in particular, had raised the ramp and put in place the rope and bollards, the incident might have been prevented. Mr Wlodarczyk would have had the benefit of traffic control and better understood when to depart. While at first glance there is some logic in this perspective, it is premised on the understanding that traffic management is all that is required, not containment.

The procedures in place at the time of the incident were apparently not developed to address unintended or inadvertent or premature departure of a vehicle from the ferry notwithstanding the 'Man/Vehicle Overboard' procedure. This is a very important omission. If the thinking associated with the ropes and bollards is traffic management (and that is clear from all of the witnesses involved in the ferry operation), here lies the opportunity for a sequence of events and conditions that cumulatively increased the risk of an incident. Mr Smith is alone, he sees the flashing headlights and thinking it might be an emergency, returns the ferry to the north bank. In the absence of a deckhand, there is no-one to position and reposition the ropes and bollards. Mr Wlodarczyk was known to Mr Smith and familiar with the ferry operation including loading and unloading. Perhaps Mr Smith thought Mr Wlodarczyk did not need 'traffic management' given his familiarity with the operation, a bit like the experience of Mr Mansfield. Similarly, Mr Smith could not have foreseen the potential consequences of the adverse weather about to descend onto the scene and how these features might impact or compound issues with how Mr Wlodarczyk's perceived what was happening vis-a-vis when to depart.

However, if the safety system had identified as a hazard - unintended, inadvertent and premature departures; and recognised the required control measure was containment, a different mindset would likely have prevailed. If the crew were trained on the need for containment in addition to traffic control, and that training followed up with supervision and auditing, there would likely be a different mindset and less chance of Mr Smith omitting to act.

The need for containment is more likely to be considered necessary in all circumstances and less likely to be rationally omitted.

This incident happened on 29 April 2013 and starting on 1 July 2013, a transition of responsibility started for maritime safety from MSQ to Australian Maritime Safety Authority (AMSA). I recently summarised the change in another inquest, which I adopt for current purposes, as follows:

> 'Before 1 July 2013, each State and Territory had its own regulatory framework for marine safety, as did the Commonwealth. The Australian Maritime Safety Authority was the Commonwealth regulator. The Queensland regulatory framework was established through the Transport Operations (Marine Safety) Act 1994 and Marine Safety Qld (MSQ) was the regulator. The Act imposed general safety obligations to ensure seaworthiness and operational safety, and allowed for those obligations to be discharged by compliance with relevant standards. General safety obligations were imposed on designers, builders, owners and masters about the condition of ships. The requirement to register a commercial vessel provided the opportunity to ensure that certificates of compliance with relevant standards from accredited entities about design and construction were obtained before the vessel commenced operation. There were regulations and subordinate legislation in the form of standards to support this scheme. Relevant to seaworthiness, Queensland adopted the Uniform Shipping Laws as well as later the National Standard for Commercial Vessel (as used by AMSA).
>
> In 2011, the States and Territories agreed with the Commonwealth, through the Council of Australian Governments, to establish a single national regulator (AMSA) and regulatory framework underpinned by the Marine Safety (Domestic Commercial Vessel) National Law to achieve consistency in the management of marine safety. The national system started on 1 July 2013. Vessels that existed at that date were grandfathered, meaning compliance with the then Qld standards was sufficient; those vessels will be transitioned to the national operational standards, so long as there is no change to the operations of the vessel or change to operational area. Compliance with the national standards relevant to vessel standards was and is not required. However, those vessels are required to meet national equipment and risk management standards over the transitional period (2013 – 2016).'

Mr Shaun Thomas, Manager, Domestic Vessel Operational Safety, AMSA reported:

- AMSA is a Commonwealth statutory authority established by the Australian Maritime Safety Authority Act 1990 with the function of regulating maritime safety, marine

environment protection and pollution response and maritime and aviation search and rescue in Australia.

- AMSA is the 'National Regulator' for the purposes of the Marine Safety (Domestic Commercial Vessel) National Law Act 2012 (the National Law). Section 10 of the National Law provides inter alia that functions of the National Regulator are 'to undertake investigation, monitoring and enforcement activities under or for the purpose of the National Law; to develop and maintain national standards, guidelines and codes of practice relating to marine safety; and to develop or commission education programs relating to marine safety.
- The vessel 'Daintree River Ferry' is a Class 1 (Passenger) 'existing vessel' for the purposes of the National Law's subordinate legislation. As such it is a condition of the certificate of operation in force for this vessel that it complies with operational practices, emergency management requirements, crewing requirements, safety management requirements and audit requirements that applied to the vessel on 30 June 2013.
- The National Law imposes general safety duty obligations on the owners, masters and crew of a Domestic Commercial Vessel (DCV). Specifically, section 12 of the National Law requires that an owner of a DCV must, so far as is reasonably practicable, ensure the safety of the vessel, the marine safety equipment that relates to the vessel and the operation of the vessel.
- The obligation to implement and maintain an SMS so as to discharge the general safety duty obligations imposed by section 12 of the National Law commenced with the commencement of National Law on 1 July 2013.

In September 2015 the ferry was the subject of a compliance inspection. By improvement notice dated 2 September 2015, MSQ/AMSA noted the ‘SMS not compliant with current standard’ and required a ‘review and update to current standard’. It appears that Sirron was still operating under the older operating records, not a formal SMS as required from July 2013. There was a transition period for operators but that expired on July 2015.

In response, Sirron engaged an external consultant to assist with a review of its operating records and the development of a SMS. In the month prior to start of the inquest, a copy of the draft SMS was submitted to MSQ in the expectation of feedback and finalisation.

The inquest started on 17 November 2015. Prior to calling Mr Norris, the then current procedures or SMS were required to be produced. The document was produced and admitted as Exhibit 22. On review, I expressed concern in court about the possibility of serious flaws

in the SMS when compared to AMSA material in evidence about what an SMS should contain by way of framework, processes and content. AMSA, through MSQ, agreed to review the SMS documents and report back to the court.

On 17 November 2015 Mr David Adams, AMSA was asked to review a revised copy of the SMS for the Daintree River Ferry to ensure it complied with the minimum requirements of National Standards for Commercial Vessels (NSCV) Part E – Operational Practices. On review, he concluded the new documented SMS did not meet the required minimum standard. He identified shortcomings and improvements to be addressed. He also noted as it was a new document, he had not had the opportunity to observe or verify any procedures, checklists or reporting documentation which may have been recently implemented on board the vessel. Mr Adams concluded that the current SMS required significant work to address and improve the identified shortcomings to ensure it is compliant.

He took the opportunity to make a number of suggestions, some of broader application, namely: –

- MSQ officers conduct operational monitoring of the ferry SMS to ensure the documented policy and procedures have been implemented and that they effectively mitigate any identified risks to an acceptable level.
- That MSQ recommend to the National regulator a working group be formed involving the owners of the 28 ferry-in-chain operations within their jurisdiction, with a view to developing a national standard for operating these vessels.
- Specific maritime auditor training be made available to MSQ officers to ensure a consistent and credible approach to auditing SMS's.

A new SMS for the Daintree ferry was developed and published in December 2015. The SMS includes a Hazard Register wherein a vehicle overboard is identified and the controls/risk reduction action includes lock traffic barrier gates at the loading ramp (reflecting the new procedure). The hazard register marks a dramatic improvement on what previously existed, particularly by way of strategic overview about what hazards were identified and how they are managed. The documentation of the framework and processes of the SMS are improved. The Man/Vehicle Overboard Procedure now includes the launching of an on-board tender.

I am satisfied that Sirron produced a compliant SMS.

Oversight – Douglas Shire Council

Douglas Shire Council engaged Sirron to provide a ferry service across the Daintree River from 10 July 2006 to 30 June 2016. The contract was more recently extended. The contract required Sirron to have an Operations and Procedures Manual as required and authorised by Qld Transport as well as a Risk Management Plan to be submitted and approved by Douglas Shire Council. It could not be established whether the latter step was undertaken.

The contract also required remote control traffic barriers to be fitted and maintained. No further information was provided in the contract about the nature and extent of the contemplated traffic barriers. It will be recalled that after the inquest into the death of Stephen Terry, Douglas Shire Council reported it imposed a requirement for a system of ropes and bollards to control loading and unloading under the supervision of the crew. It appears that Douglas Shire Council later accepted the rope and bollard system as used by Sirron as compliant with the requirement for a traffic barrier, apparently accepting the continued use of the original remotely controlled boom gates was not practicable.

I note that coincidentally in evidence, witnesses referred to safety issues with the shore based boom gates. Counsel Assisting submitted I should recommend Douglas Shire Council conduct a risk assessment and implement any necessary changes to the use and operation of the shore based boom gates. I have not addressed this matter in my findings because it lacks sufficient connection with the causal contributors to this death but I note Douglas Shire Council, in response, committed to that course in any event.

In its submission, Council stated by letter dated 15 March 2016:

> The Council also commits to conducting regular inspections of the Ferry operations and to discussing performance/non-performance issues and other general operational issues with the Ferry operator at appropriate intervals and certainly more frequently than has been the case in the past. All inspections and discussions will be properly documented to assist the Council in identifying and assessing the risks associated with the Ferry operations and monitoring the timely implementation of appropriate changes. The Council is committed to the safe operation of the Ferry service and to preventing a similar incident (or any incident) occurring in the future.

I am satisfied that Council has committed to proactively managing risks associated with operation of the Daintree ferry. While operators may come and go, Council has the opportunity to act as a repository of long term corporate knowledge about risks and to influence the terms

of its contractual arrangements with operators as another check on appropriate risk management.

Discussion, Analysis and Conclusion

The 'story' relating to this tragic death reminds me of the academic work in safety science of Sidney Dekker in his publication, '*Drift into Failure'* (Ashgate, 2011). In chapter 2, he reviews a passenger aircraft crash investigation and proposes two questions that stand between 'us and a firmer, further understanding of safety in complex systems' (p.33). The first is why, in hindsight, do all these other parts (the regulator, the manufacturer, the airline, the maintenance facility, the technician, the pilots) appear suddenly "broken" now? He writes:

> "The broken parts are easy to discover once the rubble is strewn before our feet. But what exactly does that tell us about processes of erosion, of attrition of safety norms, of drift toward margins? What does the finding of broken parts tell us about what happened before all those broken parts were laid out before us?"

Dekker suggests that part of the problem relates to what is understood as 'system thinking'. He writes system thinking is about relationships, not parts.

> "System thinking is about the complexity of the whole, not the simplicity of carved out bits. Systems thinking is about non-linearity and dynamics, not about linear cause – effect – cause sequences. Systems thinking is about accidents that are more than the sum of the broken parts. It is about understanding how accidents can happen when no parts of broken, or no parts are seen as broken."

Dekker suggests this produces the second, more fascinating question:

> "Why did none of these deficiencies strike anybody as deficiencies at the time? Or, if somebody did note them as deficiencies, then why was that voice apparently not sufficiently persuasive? If things really were as bad as we make them look post-mortem, than why was everybody, including the regulator – tasked with public money to protect safety – happy with what was going on? Happy enough, in any case, to not intervene? You see, we create a huge problem for ourselves when we call these after-accident discoveries by all kinds of normative names, like deficiency, or inadequacy, or shortcoming. Inadequate or deficient or short relative to what? Clearly people must have seen the norms that ruled their assessments and their decisions at the time is quite acceptable, otherwise pressure would have built for changing these norms. Which didn't happen."

He later continues:

> "One way to look at these influences, and the accident they eventually helped fashion, uses a story of drift: drift into failure. The story of drift is just that: a story, a way of telling things, of weaving them into a coherent narrative. The reason for telling it is not to claim a true account of what happened. The reason is to encourage a language, or a perspective on accidents, that is more open to the complexity, the dynamics, erosion and adaptation that marks socio – technical systems, then our thinking about accidents have been so far."

As a cautionary note, there is major difference between an investigations that seeks to determine whether enforcement action is warranted. Benchmarks or standards are necessary yardsticks to measuring criminal or quasi conduct. However, safety investigations are focussed on the best understanding of the accident to inform action to reduce the risk of a similar event or outcome.

Returning to the concept of drift into failure, the reader might discern from the structure of my findings and the way I have told the story; my focus is on exploring the influences or absence of particular influences that might have contributed to the outcome.

There is a history of incidents on this and the earlier ferry which might have been instructive from an operational risk management perspective. Yes, the incident with Mr Terry directly involved traffic management, and not containment, as reflected in the coronial findings and recommendations; but there was a missed opportunity to consider extending the concept of traffic management to containment with the incident involving Mr Mansfield a year later. It was also an example of how unusual circumstances might test or challenge the adequacy of existing procedures. Only the Master was on board, Mr Mansfield was experienced in making the crossing, and he mistakenly believed the ferry had reached the bank when he drove overboard. Was the need for containment recognised or was it lost in discussion about the need to comply with adequate existing procedures? Or was it considered a freak accident? However it was considered by the former operator, it is apparent there was a missed opportunity to learn from the incident through application of a risk management framework and process; and pass the benefit of that experience onto the new operators. It is not clear what role Council could have played in this process.

What of the multitude of other incidents? Mr Jack reported the incident of the mother and baby in a car that inadvertently moved forward and up the loading ramp till the car stalled. He also reported cars moving off prematurely and tangling up in the ropes and bollards. There were

incidents when cars bumped into each other, he assumed because drivers forgot to engage park brakes. Mr Healy, a former Master, made similar observations. Mr Heinson reported that people 'just don't listen', a reference to the rules about applying the park brake and remaining with the car. He said, 'Everyone ignored you'.

To my mind, these incidents clearly demonstrate that a rule based approach to driver behaviour was fraught with risk. Traffic management went some way to managing this risk, but containment was clearly needed. The other important aspect to this information is the missed opportunity to learn from minor incidents that demonstrate the existence of a hazard, even if the full magnitude of the potential harm (vehicle overboard) did not eventuate. There is an important difference between the 'hazard' and the 'risk'. The hazard is the event or condition with the potential to cause harm. The risk is a function of the prospect of the event or condition happening AND the potential for harm.

The design of the new ferry to be operated by Sirron contemplated a more substantive traffic barrier in the form of a chain across the opening. However, that did not eventuate on construction. If what was contemplated by the designer was not practicable, there was a possible missed opportunity for discussion between the designer and Sirron about an alternative that might have achieved an equivalent level of containment. However, the deteriorating relationship between the designer and Sirron might have been a limiting factor to such discussions.

The marine surveyors and MSQ officers who inspected the ferry for various purposes did not see a need for containment given the way in which traffic was loaded for the crossing. The rope and bollard system was seen and passively accepted without any discussion about hazards and associated risks. It seems the MSQ officers knew little about the history of earlier incidents and understandably nothing about the incidents that went unreported. The MSQ officers had little or no experience with cross river ferries, with only two in north Queensland, the Jardine and Daintree. There might be a number of other reasons for this lack of knowledge which we did not have the opportunity to explore in evidence. The scope of the work of the marine surveyors may not have required them to consider operational safety related to loading and unloading, and containment once loaded. The officers from MSQ were conducting routine inspections which are general in nature, or inspections responding to a particular concern, for example, why were the boom gates removed and ropes and bollards put in their place. It is clear both forms of barriers served the limited purpose of traffic management and not containment.

MSQ undertook a comprehensive investigation of the circumstances surrounding this incident and its history of monitoring the ferry for compliance. Mr Schindler concluded his investigation on behalf of MSQ, reporting there were a number of factors that directly or indirectly contributed to the outcome including the lack of effective ship safety monitoring by MSQ.

I find there were missed opportunities on the part of MSQ to identify the need for containment. In the absence of specific experience with ferries, the need for containment would only be identified if there was a robust review of the adequacy of on-board operating procedures in the context of a safety management system. In short, discussions about 'what if'. Like, what if a person fell overboard and was unconscious when they entered the water? That would have been enough to suggest the man overboard procedure was deficient. Similarly, if an MSQ officer had noticed the same procedure contemplated the possibility of a vehicle overboard, they might have inquired about why that exists, was there a past experience to suggest a need for such a procedure, how is such a possibility prevented in the first instance etc.

An absence of this approach in the many inspections that took place suggests the training and professional development of MSQ officers on safety management systems requires further attention. Most came from the maritime industry with either deck officer or engineering qualifications and experience. There has been a trend over the last couple of decades in safety management legislation and standards, moving from the prescriptive to the performance based approach. With the introduction of requirements for safety management systems, like owners and operators of vessels, MSQ officers have varying degrees of exposure to safety management systems and require professional development. It is not clear on the evidence at what stage that education and training had reached when the inspections happened.

Sirron sought to ensure it was compliant with the requirements for operation of the ferry, relying substantially on the fact it obtained relevant certificates of compliance and adopting or developing safe shipboard procedures as reflected in its operating records that were inspected from time to time. However, it is evident that Sirron did not identify the need to contain vehicles on-board the ferry during the crossing. Essentially, Sirron asserts that the need only became apparent with this incident. I accept that proposition in the limited sense that Mr Norris only came to know about the need for containment following this incident. Indeed, the absence of any comment from the officers of MSQ and the marine surveyors probably contributed to a belief that all that was reasonably required was being done. However, that ignores the missed opportunities to learn from the past and what might have been learnt through an effective safety management system. Mr Norris conceded that he had learnt much from the process of working with MSQ to bring his Safety Management System up to a compliant level.

On-board operating procedures need to be developed in a way that taps into more than the limited knowledge and experience of a single person; and needs to be developed using a risk management framework and process.

It is appropriate to note at this juncture that Mr Thomas from AMSA reports from 1 July 2013 AMSA developed and implemented an SMS Education and Awareness Program after finding:

- A high proportion of existing SMSs did not have a central risk assessment or risk register that formed the basis of the safety management system. As a result many key risks on board had not been identified or managed;
- Existing SMSs had predominantly been reliant on documentation rather than good risk management;
- Industry was only provided with SMS templates often did not achieve a satisfactory safety management outcome;
- Many owners did not have the knowledge, skills or experience to assess and manage risk in a systematic way; and
- Many owners did not understand the fundamental benefits of developing and implementing a SMS for their operation.

I consider each of these observations are directly applicable to Sirron's operation. The position has dramatically changed for the better in light of this incident due to the cooperation of Sirron and the ongoing support of MSQ/AMSA. So the very important question is now what of the other ferry operators and broader commercial vessel operators. How effective are the SMS's on domestic commercial vessels? How is effectiveness measured?

A Way Forward

In his statement dated 12 February 2016, Mr Thomas reports that since 1 July 2013, AMSA has been focussed on raising the awareness of owners in regard to their obligations under the National Law and on building their capacity to implement and maintain a simple but effective SMS that is tailored to their particular operation. He reports that to this end, AMSA has conducted SMS workshops throughout Australia with a further 44 scheduled for 2016. It has released sample SMS's to assist operator better understand what is expected. It is developing a National SMS Training Resource kit in conjunction with the Australian Maritime College. It has prepared SMS guidance and support material including a Risk Management Guide, Guidelines to implement NSCV Part E - Operations, an Emergency Procedures Flipchart and information bulletins. It is also regularly publishing risk management and SMS articles through

ebulletins and the "*Working Boats*" newsletter, which is published and distributed quarterly to all DCV owners and crew on the AMSA mailing list.

Mr Thomas reported AMSA will release an SMS Self Verification Tool to assist owners to ensure they have identified the risks associated with their operation, these risks are managed and that reassessment is continually carried out. This SMS Verification Tool will also be adapted to allow a third party objective review of an SMS.

In addition, educational material on Safety Culture was under development to ensure owners understand that an SMS must be supported by the right attitudes and behaviours in order to maximise safety outcomes. This material will be available via ELearning Modules so industry can access education materials via a multitude of media.

Turning to monitoring of compliance with the requirements for effective SMS's, Mr Thomas reports that Maritime Safety Inspectors (MSI) are empowered to conduct random or targeted operations:

- looking for evidence that an SMS has been implemented and maintained, including inspecting operations and documents evidencing the SMS;
- confirming that an SMS includes evidence of a relevant risk assessment;
- confirming that an SMS identifies and implements control measures that adequately mitigate identified risks;
- confirming that the number and qualifications of crew on board are consistent with the requirements of the SMS and the National Law generally; and
- confirming that an SMS includes a maintenance schedule for the vessel and its equipment, which is being complied with.

As to the capability of Maritime Safety Inspectors to review an SMS, Mr Thomas reports the National Regulator has, and continues to provide detailed training to Inspectors that includes specific content relating to the monitoring and enforcement of the general safety duties of owners and masters and SMS obligations. The training makes clear the National Regulator's view that the practical implementation of an SMS is a priority and guides Inspectors to seek evidence from the owners and masters that a SMS is being implemented and that they understand their roles in the prevention of and in the event of an emergency situation and/or a marine incident.

Senior members of AMSA were present as observers in court during the inquest. During submissions in writing, Mr Hemming, National Operations Manager, Domestic Vessels provided further material (submissions dated 14 March 2016) relevant to training on SMS's. Mr Hemming reported the AMSA developed an SMS verification tool which is aimed at providing MSI and other persons a means to verify the practical implementation and maintenance of an owner's SMS. Testing commenced on 1 March 2016. Once satisfied that the tool is suitably detailed and reliable, the National Regulator will provide MSI with induction sessions in the use of the tool and examples of SMS for different classes and areas of operation. The induction sessions will provide MSI who undertake reviews of SMS information on how to work with the owner/crew of a vessel in assessing the extent of the hazards or risks within the operation and ways of eliminating or mitigating the effect of the hazard or risk materialising. Furthermore the sessions will provide MSI with the National Regulators views, where there is an identified deficiency in an SMS, on the appropriate and preferred 'way forward'.

An issue that arose during the inquest was the extent to which Inspectors have access to historical information relevant to a particular vessel and information sharing between managers and inspectors. Mr Hemming reported:

> The data currently available to inspectors is heavily reliant on information extracted from State and the Northern Territory IT systems, which is then stored and viewed in AMSA's National Data Management System (NDMS). All National Law notices and breach reports are uploaded into the NDMS by inspectors and are available for all inspectors to access, both in the office and in the field.
>
> AMSA's future compliance and enforcement target operational model, intended to be implemented from 1 July 2017, reflects a contemporary compliance and enforcement approach that is intelligence and risk led, and is designed to influence significant change in the safety culture within the domestic commercial vessel fleet. This model also reflects AMSA's intention to ensure that inspectors will have near to real time access to data relating to vessels, seafarers and operators, including incident reporting, compliance actions, vessel survey and operational safety (safety management) information. Specialists have been engaged by AMSA to develop a compliance and enforcement data management plan. In addition a project to develop an annual master operating plan that will, amongst other things, describe the National Regulator's risk model will be undertaken.

AMSA's Ship Safety division publishes a Maritime Safety Awareness Bulletin twice a year that reports on trends in maritime incidents with the aim to raise safety awareness in the industry. In addition to the data made available to inspectors via the NDMS a project has now commenced to develop a similar bulletin which will be issued monthly to MSI and will include, for example, 'lessons learned' from external review, marine incidents, compliance and enforcement actions and National Law notices issued.

Required Findings

1. Julian Werner Wlodarczyk died shortly after midnight on 30 April 2013 at the Daintree River Crossing due to drowning/immersion against a background of multiple drug intoxication (methamphetamine, diazepam, codeine and cannabis) as well as coronary artery atheroma and obesity.
2. He drowned while attempting to escape his car that submerged in the Daintree River after he drove off the Daintree Ferry, likely thinking it had reached the southern bank.
3. There are a number of factors that likely contributed to this error of judgement. He was experiencing car difficulties and anxious to get home before those difficulties became more serious. It was a dark night and raining very heavily on the steel deck, all of which likely affected his vision, hearing and sense of movement; and ultimately his perception of the position of the ferry relative to the bank. Mr Wlodarczyk was also affected by drugs that likely impaired his cognitive function.
4. While the ferry operator had in-place traffic management procedures, those procedures did not sufficiently address the prospect of a vehicle going overboard, in particular, through driver inadvertence or premature departure. What was required, and is now in place, are steel gates braced with chain. Vehicles are now contained on the ferry.
5. While an earlier operator and the current operator had in-place safety procedures, and more recently, a safety management system; there were missed opportunities to identify and mitigate the risk of a vehicle overboard through containment. Similarly, the regulators safety officers and surveyors who conducted inspections missed opportunities for improvement to the operator’s procedures through the application of containment to mitigate the risk of a vehicle overboard.
6. The missed opportunities were largely due to a significant lag in the knowledge and experience of the operators, the regulator’s safety officers and marine surveyors (to different degrees), relevant to the development and effective implementation of safety management systems.
7. The operator, with the support of the regulator, developed and produced to the court a compliant safety management system. On review, it is a marked improvement on that

which existed immediately prior to the inquest hearing and bears no comparison to that which existed at the time of this death.

8. The regulator has significantly improved the resources and effort put into supporting and developing the skills, knowledge and experience of commercial vessel operators in developing and implementing safety management systems. It has also significantly improved the support to its own safety officers in reviewing the effectiveness of safety management systems. Through the training and dissemination of SMS verifications tools, operators and safety officers will be better able to make those assessments.
9. To my mind, one of the most important structural or organisational missed opportunities was the capability of the regulator to investigate, extract and capture lessons learnt, and then to disseminate that knowledge to marine safety officers. About one year after the recommendations from the inquest into the death of Mr Terry, a vehicle went overboard with Mr Mansfield and he narrowly avoided drowning. That incident should have been investigated, lessons learnt (the need for containment) and those lessons should have informed marine safety officers throughout Queensland and prompted checks in like situations. Even if it were investigated, I am not satisfied that the information systems then would have supported a proactive dissemination of lessons learnt and state-wide checks.
10. I accept that the current regulator has a National Date Management System that supports its compliance and enforcement operational model and will provide inspectors real time access to, amongst other things, safety management information. The regulator is alert to the potential to capture and share its evolving corporate knowledge on safety management back through inspectors to industry.
11. In light of the quality remedial action taken by all stakeholders in response to this tragic incident, I have no recommendations to make.

I close the inquest.

Kevin Priestly
Northern Coroner

CAIRNS
04 October 2017