\

OFFICE OF THE STATE CORONER

FINDINGS OF INQUEST

CITATION:	**Inquest into the death of Timothy Gerard O'Neill**
TITLE OF COURT:	Coroner's Court
JURISDICTION:	Brisbane
FILE NO(s):	4373/07(3)
DELIVERED ON:	28 May 2010
DELIVERED AT:	Brisbane
HEARING DATE(s):	20–24 July, 21 August, 15 October & 2 November 2009
FINDINGS OF:	Christine Clements, Deputy State Coroner
CATCHWORDS:	CORONERS: Inquest – Boating accident; night navigation; use of navigational aids; recreational boat licensing; appropriate marking of navigational hazard; sea wall

REPRESENTATION:

Counsel Assisting:	Mr David Kent
Mr Andrew Coronis	Mr Ralph Devlin SC i/b Eardley Mottram
Mrs Charmaine O'Neill	Mr Mark O'Sullivan i/b Tutt Down McKeering
Maritime Safety Qld	Mr Gregory Egan
Geoffrey Folliott	Mr Peter Feeney i/b Bernard Bradley & Assoc
Port of Brisbane Corporation	Mr Adrian Duffy i/b Thynne & McCartney
Recreational Boating Assoc	Mr Peter Murrell i/b Cranston McEachern

The *Coroners Act 2003* provides in s45 that when an inquest is held, the coroner's written findings must be given to the family of the person who died, each of the persons or organisations granted leave to appear at the inquest and to various specified officials with responsibility for the justice system. These are my findings in relation to the death of Timothy Gerard O'Neill. They will be distributed in accordance with the requirements of the Act and posted on the web site of the Office of the State Coroner.

Introduction

Timothy Gerard O'Neill died tragically on 20 September 2007 in the Princess Alexandra Hospital at Woolloongabba. He was married to Charmaine and the couple had two daughters, Annabel and Katie. His wife's statement was testament to her husband's devotion to his family and of their love for him.[1]

On Thursday 13 September 2007 Tim O'Neill (Mr O'Neill) was one of a group of three friends who embarked on a fishing trip in Moreton Bay. Andrew Coronis (Mr Coronis) was the skipper of the vessel. He invited his friends Tim O'Neill and Andrew Boorer (Mr Boorer) to join him for the trip which was arranged to commence in the afternoon and conclude that night. During the return voyage the boat attempted to enter the mouth of the Brisbane River and proceed to its berth at Murarrie. It collided with the rock seawall which is the boundary of an area in the process of being reclaimed by the Port of Brisbane.

Mr O'Neill sustained head injuries and died due to those injuries seven days later.[2] Mr Coronis was seriously injured and Mr Boorer received minor injuries.

The primary issue for this inquest is to determine "how" Mr O'Neill died in accordance with section 45(2)(b) of the *Coroners Act 2003*.[3]

The inquest will then consider whether it is appropriate to comment on issues relating to public health or safety, or ways to prevent deaths from happening in similar circumstances.[4] It is to be remembered a coroner cannot include any statement that a person is, or may be:

(a) guilty of an offence, or
(b) civilly liable for something.[5]

It is also to be noted that if, from information obtained while investigating a death, a coroner reasonably suspects a person has committed an offence; the coroner must give the information to -

(a) for an indictable offence - the Director of Public Prosecutions; or
(b) for any other offence - the chief executive of the department in which the legislation creating the offence is administered.[6]

[1] Exhibit C20, Statement of Charmaine Lea O'Neill
[2] Exhibit A3, Autopsy report
[3] Hurley V Clements & Others, [2009] QCA 167
[4] Section 46 Coroners Act 2003
[5] Section 45(5) Coroners Act 2003
[6] Section 48(2) Coroners Act 2003

The Information Considered At Inquest

The inquest is the culmination of the coroner's investigation conducted by Brisbane Water Police into the circumstances leading to the death of Mr O'Neill. Statements from witnesses as well as expert opinions and the transcript of committal proceedings in the Brisbane Magistrates Court relating to the prosecution of Mr Coronis in respect of the incident were all received into the inquest. A number of people considered to have sufficient interest in the inquest appeared and participated via their legal representatives. Their varying interest, expertise and perspectives of the events and how these matters should be considered were of great assistance to the inquest. The inquest also included a "view" which involved a night voyage on the boat involved in the incident. This was undertaken on 22 July 2009. Senior Constable Howie of the Water Police skippered the vessel along the course taken by Mr Coronis on 13 September 2007. Participants involved in the inquest accompanied the boat in other vessels. The exercise was arranged to attempt to replicate the conditions of the voyage of 13 September 2007. The tide and moon phase were similar. All of this information was considered in the inquest.

Only the evidence of Mr Coronis and Mr Boorer will be summarised in these findings as they are the only eye witnesses to the events.

The Vessel

The boat was a Boston Whaler Outrage 24 first registered in Queensland as Q1289Q in December 2006. It was a seven metre centre console fibreglass craft designed for fishing. It was fitted with a satellite navigation aid as well as a compass and standard navigation lights and safety equipment. It was accessed by Mr Coronis who was a member of Club Exec 500, an entity which allowed members with their guests to take out boats within their fleet.

The boat was equipped with a satellite navigation system called Navman. The "C map" entered in the Navman at the time was an outdated 2002 version. The up to date 2006 version of the map was found by Mr Folliott of Club Exec 500 in May 2007 in the owner's bag in the office, but it was assumed to be a spare copy. It was not until after the accident that it was discovered to be the then current 2006 version and this information was provided to the police. The outdated map did not show the area of reclaimed land at the mouth of the river which extended a distance of 1.8 kilometres out to sea into the bay. It was in this area the Boston Whaler collided with the rock seawall.

The North Cardinal Mark

The North Cardinal Mark is one of two permanent navigational aids used to warn mariners of the rock wall that is part of the Port of Brisbane reclamation construction site.

This navigational aid was variously referred to in evidence as the "North Cardinal", "North Cardinal Marker/Beacon" and "North Cardinal Mark". Having regard to the terminology used in the International Association of Marine Aids to Navigation and Lighthouse Authorities, I will refer to it as the "North Cardinal Mark" for the purpose of these findings.

The Voyage

Two people ultimately survived the collision with the rock seawall on 13 September 2007; the passenger Mr Boorer and the skipper Mr Coronis.

Mr Boorer provided a statement[7] and gave evidence at the inquest. He acknowledged Mr Coronis was a pretty good friend over a period of about seven years. He met Mr O'Neill approximately five years ago at one of Mr Coronis' parties. He considered both Mr Coronis and Mr O'Neill to be his friends.[8] He was contacted on Tuesday 11 September by Mr Coronis who invited him on the fishing trip together with Mr O'Neill. Mr Boorer confirmed his availability on the Wednesday and was picked up the next day from his home by Mr Coronis. Mr Boorer recalled a phone conversation with Mr Coronis either the night before or the morning of the trip when the weather conditions were discussed as being generally favourable. The three men left together from Mr Coronis' house and arrived at Rivergate about 2.40pm. An esky, tackle box and fishing rods were loaded. Mr Coronis introduced a person named Geoff (Folliott) who worked with Life Prosperity Pty Ltd trading as Club Exec 500, the company which supplied the Boston Whaler 24 boat. Mr Boorer observed a conversation occurring between Mr Coronis and another man from the boat company, but he did not recall details other than a review of weather conditions, and that a record of the engine hours was entered together with the fuel levels. Mr O'Neill loaded the tackle boxes and there was discussion of the safety equipment on board. Mr Coronis started the boat and Mr O'Neill helped with the fenders while boat company staff assisted with casting off.

As they left the marina Mr Coronis drove the boat and Mr Boorer was seated beside him. Mr O'Neill stood behind holding onto the back of the chair. They proceeded out of the Brisbane River mouth following the marked channel and Mr Coronis remarked this would be lit up like a Christmas tree on their return. Mr Boorer recalled seeing the area where work was occurring to reclaim land on Fisherman's Island. Trucks were seen dumping sand within the area bounded by a rock wall.

The boat proceeded to the Curtain Artificial Reef off the western side of Moreton Island between Bulwer and Cowan Cowan travelling at a cruising rate of 25 knots. The men fished for approximately four hours before Mr Coronis and Mr O'Neill anchored the boat. A prepacked dinner was eaten. Mr Boorer recalled having three Coronas during the afternoon. He said Mr Coronis had two and Mr O'Neill one. Six coronas remained.

It was about 8.00pm when the boat commenced the return voyage. It was dark and the boat's navigation lights were turned on. Mr Boorer recalled the cockpit was in darkness except for the illuminated dashboard. On the return trip he stood behind the skipper and Mr O'Neill was seated next to Mr Coronis. Mr Boorer remembered Mr Coronis activating the GPS navigation system prior to their departure. He turned to them and explained he had set a path they would follow home. Mr Boorer recalled the screen showed a horizon at the top of the screen with a light pathway through a dark blue background. He recalled this looked different to the screen set up on the way out to the reef. (Other evidence indicated when the GPS screen was in the pathway or road mode, obstacles and chart markings disappeared from the screen.)

[7] Exhibit C2, statement dated 21 September 2007
[8] T3, line 29

The boat set off and there was some conversation about a large container ship to their south. That vessel then turned more to the west and back towards the boat. Otherwise, Mr Boorer recalled a quiet voyage with little conversation. He recalled seeing a dredge and then, out to starboard, the appearance of a black line. He could not identify what it was and he thought it must be the opening to the river mouth. He thought:

> "*We're here, I was expecting to go through the hole but there was no hole and we hit it*."[9]

His statement went on to say:

> "*I recall that I was watching that line of black coming and it wasn't until a second before impact that I knew it was a rock wall and that we were about to collide with it. From the time I saw the black line and the moment of collision was a matter of seconds*."[10]

Mr Boorer's statement described Mr Coronis looking around before the collision occurred, like he was watching for things. Mr Boorer did not think they were travelling as fast as on the way out - about 20 knots on the way home. His recollection was the boat speed didn't change right up to the point of impact.

On impact Mr Boorer hit the back of the chair on which Mr Coronis and Mr O'Neill were seated. He did not incur serious injury. The engines were revving loudly and it was dark. He called out to Mr Coronis but there was no response. He managed to turn the engine off. Mr Boorer then recalled Mr Coronis standing up and asking where was Tim? (Mr O'Neill). The boat was on an incline and Mr O'Neill was on the floor with his left leg wedged against the seat and his head facing the bow. Mr Boorer tried to check his breathing and pulse. He managed his airway as best he could by finding the best position for Mr O'Neill's head. He attempted to clear his airway.

Mr Coronis was attempting to obtain help via the CB radio and his phone. By chance, Mr Boorer's wife rang Mr Coronis' phone and received the information about the accident and a request for ambulance assistance. The Port Master acknowledged the mayday call. While they waited for help Mr Boorer tried to move Mr O'Neill into the recovery position with Mr Coronis' help, but Mr Coronis was restricted due to a broken arm suffered in the collision.

The Water Police were the first to arrive on scene and Constable Trent Lucas boarded the boat. Subsequently Queensland Ambulance Service officers arrived and accessed the boat by driving along the top of the seawall. Immediate first aid was provided to Mr O'Neill to stabilise his condition before he was lifted from the boat on a stretcher. This was a difficult and potentially dangerous manoeuvre with the boat in an unstable position on an incline. Attention was then provided to Mr Coronis to splint his arm.

Mr Boorer noticed the main seat had bent forward on impact and there was a mark on the console where Mr Boorer presumed Mr O'Neill had struck his head. All three men were taken to hospital.

[9] Exhibit C2 p5 pgh 25
[10] Exhibit C2, p5 pgh 27

Mr Boorer's memory was tested at the inquest, and unsurprisingly, with the passage of time he had little detailed memory. He could not recall whether the boat remained within the marked channel after proceeding past the seawall as it headed out to sea.

He recalled the large container ship on the return voyage. He said they sighted it ahead of them and went past it leaving a wide berth as they went around it. He could not identify where this was in Moreton Bay. He did clarify his recollection of the speed of the boat on the return voyage, saying the boat slowed a few minutes before, just to see what was happening.[11] His recollection was that possibly the boat may have slowed slightly prior to impact. This recollection was based on the change in the sounds of the engine revs as he did not have his glasses on and could not really see the instruments. Mr Boorer stated it was his impression the boat did not slow in response to Mr Coronis seeing the seawall, the boat slowed earlier.[12]

Significantly, Mr Boorer's evidence regarding the sighting of the container ship was clarified in cross examination. He agreed it was ten, even twenty minutes before the incident occurred,[13] and it was closer to Moreton Island than to the Port. The large vessel was well behind them by the time they arrived in the vicinity of where the accident occurred.

Mr Boorer was standing on the starboard side of the boat behind Mr O'Neill and generally looking out to his right-hand side. He indicated he was confused about lights he saw. He thought it was the airport, but in hindsight it was the channel markers out on his right hand side. He recalled they were flashing, but could not recall the colours. He acknowledged he was colour blind between red and green. There was no discussion on board about the lights.

Mr Boorer realised after the incident that he thought the boat was travelling to the north of the shipping channel as it approached the port, rather than to the south.

The line he observed on the water was forward and to starboard of the boat at an angle estimated at 100 degrees. Mr Boorer confirmed Mr Coronis was looking around as they approached the port, "*concentrating on driving*" and "*we weren't talking too much*."[14]

Mr Boorer also said he had not discussed the fine details of how the incident occurred with Mr Coronis at any time. He said, "*I didn't want to confuse myself with the details*."[15] Nor could he remember much detail by the time of the inquest, for example he says he saw Mr Coronis using the GPS but he did not really pay attention to what he was doing. It appeared to him Mr Coronis was following the line on the GPS back into the port. Mr Boorer indicated he was daydreaming on the way home. He did not talk with Mr Coronis about where they were.

Mr Boorer described exactly what he saw:

> "*What I could see was water in the horizon - everywhere I was - I was looking at water to the starboard, and then a line appeared, from my recollection, probably a third of the way down the horizon which started as*

[11] T3 p 36, L 10-15
[12] T3, 36, L 54-57
[13] T3, P38, L10-12
[14] T3, P41, L 10-15
[15] T3, P 43, L 28-30

> *very fine and then within seconds was larger and that turned out to be the brick wall. So it was only seconds before we hit the wall, I could see a line which opened up and then we hit it. So there was still water behind it and water in front of it*.[16],

Mr Boorer didn't know it was a wall until after the incident. He didn't hear anyone yell out; he didn't hear anyone say anything. His evidence indicated the impact happened very quickly after he first saw what he described as a black line on the horizon. According to his evidence, the realisation they were about to collide with something occurred almost simultaneously with the collision.

Mr Boorer had no recollection of seeing the North Cardinal Mark before or after the collision. The evidence was the seawall was unlit in any way.

Mr Boorer was aware Mr Coronis had planned the route of the voyage, checked the weather conditions on line, as well as the boat safety equipment with the boat supplier. There was an alternative destination planned with more shelter if the weather conditions deteriorated.

Mr Boorer was not certain, but he thought the GPS was in highway mode showing a path to follow, rather than the chart mode, immediately before the collision.

Mr Boorer also helpfully gave direct evidence of what was required of him in 2006 when he obtained his recreational boat licence. He attended a theoretical course over a day, completed a multiple choice exam and performed a practical test on the Brisbane River. This occurred during daylight.

Mr Boorer appeared diligent and truthful in trying to recall details of the tragedy.

Evidence from Mr Coronis

Mr Coronis was the skipper of the boat on the day and at the time of the collision. Prior to the inquest, he faced committal proceedings in the Brisbane Magistrates Court arising from the incident. The magistrate found there was no case for Mr Coronis to answer and dismissed the charge.

Given the circumstances of the boat's collision with the seawall it was possible Mr Coronis was at risk of incriminating himself in providing evidence to the inquest. He sought a direction of the coroner requiring his testimony to be given to the inquest. An order was made pursuant to section 39 of the *Coroners Act 2003*, including an order to provide protection of his written statement[17] which was provided to the inquest prior to his oral evidence. This order noted that Mr Coronis claimed privilege in respect of his oral evidence about the preparation and planning and the actual voyage itself on the Boston Whaler undertaken on 13 September 2007. I directed Mr Coronis to answer questions about these matters. The order also noted that Mr Coronis' claim of privilege did not extend to matters outlined in paragraphs 1 – 6 and 9 of his written statement.

Mr Coronis confirmed he was a very close friend of Mr O'Neill over a twenty year span.

[16] T3, P48,L66-P49, L1-5
[17] Exhibit F8

Mr Coronis was a member of a club operated by a company called Club Exec 500 which provided access to a range of boats. He joined the club in January or February 2007. A $10,000 fee entitled him to the use of five boats ranging between 21 and 44 foot craft moored at Rivergate Marina. He held a recreational boat licence obtained in the mid 1990's. Oral evidence revealed he obtained his licence via Archie's Boat Licence School. He attended a one day course including a practical test in a boat at Bribie. The course involved three or four hour's theory followed by the practical test in the boat in the Bribie Passage. There was an exam which he passed. He confirmed it was all conducted in daylight and there was no practical test of night navigation skills or identification of navigation lights. He had not undertaken any further training and was not required to do so once the recreational licence issued. At the time he obtained his licence he considered he had learnt something about navigation lights.[18]

Mr Coronis and Mr O'Neill went on an annual fishing trip and had planned to go to Fraser Island on 8 September. That trip was cancelled and instead, the day trip within Moreton Bay was planned. Thursday 13 September was agreed. Mr Coronis planned to fish at Curtain reef near Moreton Island if the weather was good, or behind Mud Island if the wind was too strong to venture across the bay. If the weather was unfavourable the trip would be cancelled.

Mr Coronis checked the weather on the day of the trip on line. On arrival at the marina he went through standard preliminaries with Club Exec 500 staff before boarding the Boston Whaler and departing the marina. He had used the boat previously and was aware it was less than twelve months old.

Mr Coronis' Experience in Night Navigation

Mr Coronis' statement indicated:

> "*I had used the Boston Whaler at night about a month before. On that occasion I took the Boston Whaler to a reef off Cape Moreton with three others on a similar afternoon/night fishing trip and drove the vessel through the river mouth back to the marina*."[19]

In his oral evidence Mr Coronis was asked how many times he had come back to Brisbane as a skipper at night. He said he wouldn't like to hazard a number, but "*it'd be under five, two nights with Dream Boats, the night of the accident, and a night previous to that*."[20]

However, later in his answers to Counsel Assisting, Mr Kent, it emerged it was only "*once before at night time*" that Mr Coronis had himself skippered the boat back into the mouth of the Brisbane River. This was a fishing trip six weeks to two months prior. Mr Coronis went on to say there were "*four other skippers on the boat as well that night*". Mr Coronis had no trouble on that occasion and on refection considered it was clearer to pick up the wall when making the approach from the north whereas on the night of the accident, he approached more from the south. He said "*I've never done that before*."[21]

[18] T9, p 17, L40
[19] Exhibit F8, P2, paragraph 20
[20] T9, P22, L26
[21] T9, P31, LL46

He went on then to explain that on the previous trip he had used the Navman to select a point but it was further out (to sea) and they came back in on the northern side of the channel and probably didn't use the Navman as much, because it's more visual than using the chart.

But on further clarification, Mr Coronis conceded it was one of the more experienced skippers who navigated in and Mr Coronis "*took it in from the mouth of the river area*."[22]

Finally Mr Coronis agreed that the voyage on 13 September 2007 was the first time he was the sole skipper of the Boston Whaler as it returned to the mouth of the Brisbane River at night.[23]

Mr Coronis did not know whether the Navman could be operated in a split screen mode showing both a chart and a selected path.[24] Mr Boorer's recollection was that he thought the screen was in the road or pathway mode rather than chart mode immediately before the impact.

What is crucial is that when the Navman system is displayed in highway mode it does not show obstacles which would otherwise appear on the chart display. However, even if the screen had been in chart mode, it would not have shown the rock wall or North Cardinal Mark as it was the 2002 version, rather than the 2006 version.

Mr Coronis admitted that on the day of the collision, he did not know there was a North Cardinal Mark which marked the north face of the rock sea wall.[25] He did not see the navigation marker as he left the Port on the seaward voyage. He acknowledged he was navigating by sight and knew where he was going as he left the river mouth. He proceeded at 25 knots. He did not enter any way points in the satellite navigation system on the outward voyage as he thought "*There was no need to*."[26]

Mr Coronis described how he set a course home:

> "*I used the Navman satellite navigation system to plot a course home. I moved the cursor on the map to the mouth of the Brisbane River, and then pressed to go to cursor and set a course on the chart*."[27]

He acknowledged he did not know the scale on the machine. He explained he set the destination point carefully aiming "*at the mouth of the river, what I thought was the mouth of the river, so that I could come into there, and then pick up visual signals to take (himself) in visually*." [28] He did not use any of the existing way points other operators had entered in the system and he had not taken the opportunity to mark his own way point on the outward journey.

He then set the display to "show the road" which was consistent with his previous practice. Occasionally he switched to the map display as he proceeded home. He was travelling at 20-25 knots on the way home. He recalled seeing a big car carrier next to Moreton Island and they cut across in front of it. He knew it was then coming from

[22] T9, P32, L15
[23] T9, P32, L18-20
[24] T9, P24, L11-21
[25] T9, P26, L2
[26] T9, P26, L36
[27] T9, P27, L1-4
[28] T9, P27, L18-21

behind him. He did not see that vessel again until after the accident had occurred. He stayed out of the channel because he didn't want the larger vessel getting too close.

When asked to explain how far off the channel markers he set his course, Mr Coronis said he was following the road and the map and doing his best. He believed he was on the course he had set by the GPS. He acknowledged it wasn't a conscious decision to be this far out from the channel. He was navigating by reference to the GPS path and by observation, rather than reference to the channel markers. He knew he was outside the channel but he thought he had set the point at the mouth of the river thinking it was outside the wall, "*further out to sea from the wall, because the wall wasn't demonstrated on the map*."[29] He would then navigate in visually. He was relying on the GPS path, the information from the depth sounder and his visual observations and thought he was on a good course to come straight through the mouth of the river. In retrospect, he also acknowledged he was being pushed south by the tide.

Mr Coronis recalled throttling back at one point but agreed he was still on the plane which meant he must have been doing 20 knots.

In hindsight, Mr Coronis thought he observed the North Cardinal Mark about 40 metres away. He picked it up and corrected his steering to pass a safe distance to the right hand side of it expecting it to be in clear water.

Crucially, he acknowledged at the time he knew it to be a cardinal marker but he did not know it was the North Cardinal marking the wall.[30] He was unaware how to distinguish one cardinal mark from another (by counting the flashing light sequence.)

Mr Kent asked him whether he knew a different flashing frequency indicated a north rather than an east cardinal. Incredibly, Mr Coronis answered he did not; indeed, he did not know this until Mr Kent explained it to him. Mr Coronis said, "*That's the first time I've heard that*."

Mr Kent clarified: "*What, when you got into the inquest?*"

Mr Coronis replied: "*No, with you now*."

Mr Kent: "*You've sat through the inquest, though, you know north cardinals flashes and frequency?*"

Mr Coronis: "*I knew that, sorry - but yeah, I do know they flash at certain frequencies. But I just – it doesn't come to me second nature, to know they flash separately to an east cardinal*."[31]

If he had ever been taught this when he obtained his recreational boat licence it had passed from his mind. Mr Coronis thought the North Cardinal Mark was marking shoals (shallow water) down there.

He thought the shallow water was directly to the south of the mark and, if he passed to the right, he would be okay.

[29] T9, P29, L6-7
[30] T9, P30, L17-18
[31] T9, P30, L45-54

After revisiting the scene in the course of the official view, Mr Coronis considered he was less than 30 metres away when he first saw a line in the water ahead of him. He said there was no warning, no throttling back before the impact occurred.

Mr Coronis acknowledged his return path was out of the channel to the south but he maintained he remained within the track shown on the Navman display screen.

He agreed when confronted with the North Cardinal Mark, he had not referred to any alternative chart such as the Beacon to Beacon publication which was available on board. He said he was aware of the existence of the rock wall but it was not shown on the Navman chart in the boat at the time and this was one of the factors contributing to the accident occurring.

Mr Coronis simply did not recognise he was in the vicinity of the rock wall hazard and thus saw no reason to reduce his speed. The water was sufficiently deep for his craft and he was relying on his eyes to detect any danger. He saw, but misinterpreted, the North Cardinal Mark to indicate shallow water to the left hand side. He did not understand the warning that navigable water was only to the north of the beacon.

He acknowledged he had not noted the existence or proximity to the wall of the North Cardinal Mark earlier. He was not aiming for any charted navigation mark or light but rather to a point he had set via the Navman, believing it to be further out to sea than the rock wall.

He had not noticed on his way out of the harbour that the Navman chart did not show a true position for the rock wall; he was mainly relying on visual means when he left the port.

In hindsight, Mr Coronis considered the training he had undertaken was insufficient to equip him for night navigation and that he placed great reliance on his satellite navigation system. He had relied on the Navman as an up to date device. He acknowledged he had passed to the southwest of the North Cardinal Mark, but he again relied solely on the pre-set GPS course and did not refer to the compass to check his bearing. Mr Coronis thought he knew where he was and so when he saw the North Cardinal Mark, he did not stop or slow down as he thought it was warning of shallow water rather than the presence of the rock wall. He said:

> "*I know I was keeping a very good look out with my eyes, I know I had a GPS chart that had told me not so much previously there was clear water ahead of me, I know that I had deep enough water underneath me and my - as I've said previously, my presumption was that it was warning of the shallower water down south rather than the rock wall, and I thought I was further out in the bay than what I was: and in that case, there was no need for me to slow down*."[32]

Mr Coronis was unaware of where or how to access Notice to Mariners prior to the collision.

Discussion of Navman Course on Return Voyage

The record from the Navman of the outward and return voyage shows the outward voyage on the starboard side of the "Brisbane Road" which marks the shipping

[32] T9, P55, L37-44

channel. Mr Coronis agreed the return voyage was .65 nautical miles to the south, south east of the outward route, but was narrowing as the track approached the mouth.[33]

Mr Coronis remained firm that he had set the cursor in the river mouth and pressed "go to." He believed the GPS would have corrected and wheeled him around to the north from that track. He thought the tide had pushed him more southerly. He maintained the vessel was within the GPS "road" showing on the screen.

Mr Kent challenged him that if he had been pushed half a nautical mile that this would have shown that he was off the roadway. Mr Coronis accepted the proposition but maintained he remained on the GPS marked track. He considered it was cross track error. Mr Coronis said, "*I was certainly on the left-hand side of the road on the screen of the GPS, but I know that to be (the case) because I was on the southern side of the channel...It was in the marked road*."[34]

The possible explanation arose from careful examination of and reflection upon the capability and settings of the Navman provided both by Mr Folliott of Club Exec 500 and Sergeant Finlay of the Water Police. Mr Folliott's evidence revealed the factory default setting on the Course Deviation Index (CDI) was found to be half a nautical mile which means the image of the road depicted on the screen represented one nautical mile which is 1.8 kilometres.

It was unclear on the evidence whether the Navman had been reset to a different setting (from the factory default) although Mr Finlay's examination of the device suggested it was set on a default setting of .05 nautical miles which equates with the road track width of 180 metres.

Mr Duffy, Counsel for the Port of Brisbane, clarified that the Navman would show if the boat was travelling within the course deviation range, but towards the edge of the range. Mr Devlin, Senior Counsel for Mr Coronis established that Mr Folliott (Club Exec 500) did not have a practice of altering the factory settings on the Navman system during operation of the business.

It is of critical importance to this inquest what default setting was in place. The evidence from the download from the Navman showed Mr Coronis' return voyage .65 nautical miles to the south- south east of the outbound voyage. If the factory default setting of .5 nautical mile was operating at the time this might well be consistent with Mr Coronis' evidence. He said the icon depicting the boat on screen was showing within the set track produced when he put the cursor on the mouth of the river and activated the Navman to "go to" the selected destination.

The other critical points flowing from this issue are:

(1) Club Exec 500 did not have a practice of altering the factory default setting and therefore, unless an individual operator changed the setting, the guide track would depict a road width of one nautical mile;

(2) the evidence indicated Mr Folliott was unaware until the inquest of the factory default setting for the course deviation index on the Navman;

[33] T9 P33, L39-44
[34] T9 P35, L43-46

(3) the inference that can be drawn is that clients of Club Exec 500 were not alerted to this information;

(4) Mr Coronis was unaware of the course deviation setting operating on the Navman on 13 September 2007 and was unaware what width was represented by the track shown on the Navman;

(5) Mr Coronis did not alter the course deviation setting on 13 September 2007;

(6) Mr Coronis relied on the Navman to steer a course aimed at the mouth of the Brisbane River by keeping the icon on screen within the marked track. However, he did not use a navigation mark or pre-established way point to set the destination; and

(7) if the Navman was on the factory default setting of the CDI, the track was one nautical mile wide (1.8 kilometres). If the CDI was set at .05, the track was 180 metres wide. The evidence was unclear on what default setting was operating at the time of the accident.

The Area under Reclamation and Collisions Associated with this Structure

The Port of Brisbane commenced extending Fisherman Island by reclaiming land further out into Moreton Bay in approximately October 2002.[35]

Conditions were imposed including:

> "*The construction authority must supply, install and maintain any warning signs which the Regional Harbour Master, Brisbane considers necessary. All lights, buoys, marks, signs, etc. must be in accordance with the requirements of the department of Transport (Maritime Division)*." [36]

A Notice to Mariners was issued alerting mariners of the construction. On 14 August 2003, another Notice to Mariners was issued by Maritime Safety Queensland notifying mariners of a series of lighted Special Mark buoys which flashed yellow. These were established temporarily around the perimeter of the Seawall construction site. On 24 October 2003, a further Notice to Mariners was issued advising construction works would commence from 31 October 2003 and continue until approximately April 2005.

On 17 December 2003, a commercial crab fisherman collided with a dive boat which was associated with the project. The incident happened within the lighted special markers. This led to a Notice of Prohibition issuing in February 2004 prohibiting access by the general public, including berthing, mooring, anchoring or operating a ship within the Special Mark buoys.

Permanent aids to navigation warning of the structure were deployed by August 2005. These were the North Cardinal Mark and the East Cardinal Mark.

There was some evidence asserting the North Cardinal Mark was incorrectly positioned, but after considering all the evidence on the issue, I am satisfied these

[35] Exhibit G1, statement of Captain Johnson, P3, Paragraph 12
[36] Exhibit G1, P 3, paragraph 11

markers were deployed in accordance with the International Association of Marine Aids to Navigation and Lighthouse Authorities (IALA).[37]

The IALA Aids to Navigation Manual defines the cardinal mark. Each cardinal mark is named after the quadrant in which it is placed. The name of a Cardinal Mark indicates that it should be passed to the named side of the mark, thus a North Cardinal Mark is passed to the north. The IALA navigation manual states a cardinal mark may be used, for example:

3.6.1 To indicate that the deepest water in that area is on the named side of the mark.

3.6.2 To indicate the safe side on which to pass a danger.

3.6.3 To draw attention to a feature in a channel such as a bend, a junction, a bifurcation or the end of a shoal.

The rock wall was completed by August 2004. There have been four collisions with the rock wall since completion, which were brought to the attention of this inquest. The most recent collision occurred on 1 August 2009 and was in close proximity to where the Boston Whaler collided with the wall. The pictures of that vessel, which came to rest up on the rock seawall itself, graphically demonstrate the potential for serious damage and injury.[38]

Other incidents involving collision with the rock seawall occurred on 21 April 2007 and 13 May 2008.

The risk assessment undertaken by Dr Duncan Gilmore of Gilmore Engineers following four separate incidents of collision by boats with the rock seawall was helpful.[39] However, I consider it is unduly dismissive to state "*statistically, the probability of a recreational ship colliding with the rock wall is clearly very small, given the ratio of thousands of ship movements which can be expected yearly*."[40]

It is trite to state that if recreational boat operators were navigating correctly they would not hit the wall. Dr Gilmore expressed the opinion "*recreational operators striking the Rock Wall are unlikely to be navigating correctly, i.e. by adhering to the IALA buoyage system, checking their position and locating beacons on charts, slowing down and keeping a good lookout. On this basis, it is likely in my opinion that further illumination of the Rock Wall would be unable to totally prevent collisions*."[41]

---

[37] Evidence critical of position of north cardinal marker - Captain Holmes, and Captain Pelecanos who preferred special markers, Mr M Job, Southern Cross Yachting, who considered the NCM was south of the northern most tip of the sea wall, and preferred a series of cardinal or special marks. Mr G Osborne, Tangalooma Resort, also agreed the marker was incorrectly placed, as did Mr Corten, former employee of Maritime Safety.

Evidence of those supporting the currently positioned cardinal markers - Captain Marchbank, Mr R Bertram, Acting Manager Marine Operation, Maritime Safety, and Mr G Hale, Acting Assistant Harbour Master., Mr J Huggett, Director Maritime Services, Mr R Johnson, Brisbane Harbour Master, Dr Gilmore.)

[38] Exhibit G1.38
[39] Exhibit G10
[40] G10, P3, paragraph 3
[41] G10, P3

However, the evidence in this inquest from Mr Coronis and Mr Boorer was that, despite keeping a lookout, the conditions on a moonless night at high tide made the rock wall almost invisible until seconds before impact. This evidence was accepted and demonstrated again when a "view" was conducted in the same vessel in similar tide and moon conditions. The rock seawall was extremely hard to discern even when looking for it and knowing it was in close proximity.

Certainly Mr Coronis lacked the required understanding of the warning given by the North Cardinal Mark, and a reference to the satellite chart he was using did not assist because it was incorrect. But there remains the problem of being able to visually detect the rock seawall in moonless conditions at full tide. Although Mr Coronis' evidence was he saw and went past the North Cardinal Mark, there is a significant distraction from existing lighting on land emanating from the Port of Brisbane which makes it more difficult to pick up and identify the rock seawall on approach.

Although perhaps not statistically significant, the risk presented by the unlit sea wall is real and very dangerous, especially to those mariners least likely to be expert in night navigation - recreational boat operators. There has been discussion of the risks for small vessels proceeding in shipping lanes which are well marked but present hazards for smaller vessels from the larger vessels. Large ships are unlikely to collide with the seawall as they would run aground before impact, but shallower draft recreational vessels can traverse waters right up to the face of the seawall.

A coroner's obligation is to recommend changes which may reduce the likelihood of deaths occurring in similar circumstances in the future. I respectfully disagree with Dr Gilmore. Making the rock wall visible is likely to assist in preventing further collisions, and hopefully prevent the tragic loss of another life.

Findings Section 45 Coroners Act 2003

(a) The deceased person was Timothy Gerard O'Neill, who was born on 24 November 1967.

(b) Mr O'Neill died due to head injuries suffered in the collision of a Boston Whaler vessel skippered by Andrew Coronis. On 13 September 2007 the vessel hit the rock seawall perimeter of the Port Reclamation Area at the outer entrance to the mouth of the Brisbane River. The collision occurred due to a range of factors including:

(i) it occurred on a moonless night at high tide when the rock wall was extremely difficult to see;
(ii) the rock wall was unlit and undeveloped;
(iii) there was significant backlight emanating from the Port of Brisbane;
(iv) the boat was equipped with an out of date Navman map which did not show the rock wall;
(v) the Navman had a chart mode which showed hazards and navigation markers, and a highway mode to set a path which did not show hazards or navigation marks;
(vi) Mr Coronis relied on the Navman and visual observations. He did not refer to other charts;
(vii) Mr Coronis did not use the Navman to set a way point on the outward journey to return to the mouth of the Brisbane River in the dark. He selected a spot in the mouth of the river which he believed was clear of

the rock wall and activated the Navman in highway mode to go to that spot. He did not know what scale was set on the device. He switched between chart mode and pathway mode on the return voyage;

(viii) Mr Coronis kept a lookout on the return voyage and otherwise relied on the Navman to safely bring him into the mouth of the river. He travelled at 20 -25 knots but had decreased his speed to 20 knots prior to the collision. The boat remained on the plane;

(ix) he was aware he was outside and south of the shipping channel which he avoided due to the risks presented to small boats. There were no large vessels in the channel at the time but a large car carrier had been overtaken and left behind them 10-20 minutes prior to the collision;

(x) Mr Coronis saw the North Cardinal Mark which marks the northern face of the rock sea wall. He did not know the sequence of flashing lights meant there was safe navigable water to the north of the beacon. He erroneously thought the beacon signalled shoals (shallow water) and that he would be safe if he passed to the right hand side. His depth sounder showed sufficient water. He proceeded south west past the North Cardinal Mark at about 30 metres distance. He collided with the rock wall almost at the same time as he first became visually aware of its presence.

(c) Timothy Gerard O'Neill died on 20 September 2007.

(d) He died in the Princess Alexandra Hospital at Woolloongabba, Brisbane, Queensland.

(e) He died due to head injuries sustained in the boat collision on 13 September 2007.

Referral

I am not satisfied in all the circumstances that there is sufficient information on which to refer Mr Coronis to a prosecuting authority under section 48(2) of the *Coroners Act 2003*. In coming to this conclusion, I am mindful of the operation of section 48(1) of the Act, which precludes information compelled under section 39(2) of the Act, being taken into account when considering my obligation under section 48(2).

Recommendations pursuant to Section 46 Coroners Act 2003

A. Issue: The current recreational boat licensing regime is insufficient to equip a licence holder to safely navigate at night.

(1) The recreational boat licence should be reviewed to add an additional certification for operation of a boat between sunset and sunrise. The certification must require sufficient theoretical and practical testing of night navigation knowledge and on water practical skills.

(2) If the recreational boat licence is changed as recommended, consideration also be given to restricting existing recreational boat licence holders to daylight operation until their licence is upgraded with the night navigation certification.

(3) Consideration of a five yearly theoretical refresher test of knowledge of boating rules and navigational knowledge.

(4) The evidence indicates there is common reliance on satellite navigation aids, and perhaps more reliance on these than paper charts and guides. The evidence revealed the satellite navigation aids can be used without an understanding of the scale of the map presented on screen which can create a dangerous situation. It is recommended that future navigation skill testing should include both chart based understanding and interpretation, as well as the operation and understanding of satellite navigation devices. Cross referencing between these aids to navigation should also be included in licensing requirements for night navigation certification.

B. Issue: The visibility and warning of existence of the rock seawall perimeter of reclaimed land at the mouth of the Brisbane River, particularly in conditions of new moon and high tide.

(5) It is recommended the light of the existing North Cardinal Mark indicating the seawall be changed to a "very quick" sequence to improve its visibility and attract mariners' attention, noting there is considerable background lighting on land, particularly from the perspective of small boat operators.

(6) It is recommended that Maritime Safety Queensland direct the Port of Brisbane to light the face of the rock seawall, with due consideration of shrouding of lighting to ensure attention is drawn to the face of the rock sea wall but does not add to light "clutter". When development of the reclaimed area reaches a stage where it becomes visibly obvious on approach from Moreton Bay at night-time, the lighting of the sea wall may no longer be necessary.

(7) Alternatively to recommendation (6) above, consideration should be given to testing a series of marker buoys or "special markers", as deployed during the construction stage of the rock sea wall.

(8) It is recommended that Maritime Safety Queensland conduct an information and education campaign by mail and other forms of communication that will:

(a) reach each holder of a marine vessel driver's licence and each registered owner of any recreational vessel in Queensland;

(b) extend to New South Wales Boating Authorities to pass on to its licensees who may be visiting Brisbane;

(c) reach all charter operators and organisations that charter hire vessels and to people who may operate them in circumstances such as Club Exec 500;

(d) include information drawing attention of licence holders to:

- the need to ensure that navigation is carried out by use of ALL available information (charts etc) and not by solely relying upon navigation by GPS;
- the need to have updated information available, including most particularly updated electronic charts in GPS units;
- the need to travel at a safe speed when entering the Port of Brisbane, particularly at night and in other conditions of limited visibility;

- clarify the apparent anomaly in instructions between the need to avoid large vessels in the channel and the need to safely navigate into the river; and

- the availability of ongoing information about new developments in this area, in particular the availability of Notices to Mariners and the way in which that information can be accessed.

Concluding Remarks

I thank Counsel Assisting and instructing Solicitor and all who have participated in this inquest. I thank the investigating team for their assistance. I acknowledge and thank the Water Police and Queensland Ambulance personnel for their efforts in difficult and dangerous conditions to retrieve and treat Mr O'Neill and transport him to hospital.

I extend the court's sincere condolences to Mr O'Neill's wife and their children, and family and friends on his tragic death. It is hoped the inquest has assisted in determining what happened and how such an occurrence might best be prevented from recurring.

I close this inquest.

Christine Clements
Deputy State Coroner
Brisbane
28 May 2010