



CORONERS COURT OF QUEENSLAND

FINDINGS OF JOINT INQUEST

CITATION: **Joint Inquest into the presumed deaths of David Barry Chivers and Matthew Neil Roberts from the FV *Cassandra* and Adam Jeffrey Bidner and Zachary John Feeney and Christopher David Sammut and Eli Davey Tonks from the FV *Dianne* and the deaths of Adam Ross Hoffman and Benjamin Patrick Leahy from FV *Dianne***

TITLE OF COURT: Coroner's Court

JURISDICTION: Gladstone

FILE NO(s): COR 2016/1622, 2016/1637, 2017/4709, 2017/4711, 2018/5398, 2018/5402, 2018/5405, 2018/5407.

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26th – 28th March 2019

FINDINGS OF: Magistrate D O'Connell, Coroner

CATCHWORDS: CORONERS: Inquest – Loss of life arising from capsizing of two fishing vessels – causes of loss – recommendations as to safety improvements in fishing industry

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Chivers Family	Ms J Hewson (instructed by Caxton Legal)
Mrs Suzanne Hoffman	Mr M Holmes (instructed by East Coast Injury Lawyers)
Mr Ross Hoffman	Mr P Carter (of Southern Gold Coast Lawyers)
Leahy Family	Ms M Zerner (instructed by Thynne Macartney)
Mrs Sharryn Sammut	Mr W Ross (of Collas Moro Ross Solicitors)
Australian Maritime Safety Authority (AMSA)	Mr T Foley (In-house Legal)
Dept of Agriculture & Fisheries (DAF)	Ms K Bryson (In-house Legal)

Findings

FV Cassandra and FV Dianne

- [1]. On 4 April 2016 the *FV Cassandra* and on 16 October 2017 the *FV¹ Dianne* were lost at sea with a total of eight persons reported missing, believed to be deceased. The two sinkings were directed² to be held as a joint inquest due to the similarity of circumstances.
- [2]. The circumstances are a significant concern as eighteen³ commercial fishermen have died at sea in the waters off Queensland in the years since 2004⁴. Too many persons in the fishing and trawling industry have been lost over the years and despite a number of inquests recommending improved safety measures little has actually changed or been implemented despite technology being available. It is a dangerous industry and it is appreciated by many that the elimination of all dangers can never be achieved, but there are certainly steps which can be taken to reduce the incidences of loss of life at sea, particularly for the rescue of those persons who survive⁵ an initial capsizing event.

Tasks to be performed

- [3]. My primary task under the *Coroners Act 2003* is to make findings as to who the deceased person is, how, when, where, and what, caused them to die⁶.
- [4]. Accordingly the List of Issues for this Inquest are:-
1. The information required by s.45 *Coroners Act 2003*, namely:
 - (a) are Mr Roberts, Mr Chivers, Mr Bidner, Mr Feeney, Mr Sammut and Mr Tonks deceased?
 - (b) what is the name of each of the deceased persons?
 - (c) when did each death occur?
 - (d) where did each death occur?
 - (e) what caused each death?
 2. With respect to the *FV Cassandra*:-
 - (a) what caused the vessel to sink on 4 April 2016?
 - (b) was the vessel compliant with all stability requirements?
 - (c) did each of the safety or emergency devices on-board the vessel deploy or operate as intended or expected; and if not, could this have contributed to the loss of life or of the vessel?

¹ I appreciate the crew did not consider the *Dianne* a fishing vessel (the 'FV' nomenclature) as it was a bech-de-mer harvesting vessel, but that is its' appropriate title. I use the term fishing vessel for it throughout these findings and I mean no disrespect to these divers' vessel.

² Exhibit Cassandra A.7, State Coroner issued Direction for a Joint Inquest under s.33 *Coroners Act 2003*.

³ Including the eight the subject of this joint inquest

⁴ See exhibit G.14

⁵ Whether thrown clear of a vessel or being trapped alive inside of it.

⁶ *Coroners Act 2003* s. 45(2)(a) – (e) inclusive

- (d) could the loss of the vessel have been avoided?
3. With respect to the FV *Dianne*:-
- (a) what caused the vessel to sink on 16 October 2017?
 - (b) was the vessel compliant with all stability requirements?
 - (c) did each of the safety or emergency devices on-board the vessel deploy or operate as intended or expected; and if not, could this have contributed to the loss of life or of the vessel?
 - (d) could the loss of the vessel have been avoided?
4. What further safety measures (including changes to safety equipment), might reasonably be adopted with a view to preventing, or reducing the risk of further loss of life in the circumstances? Such further safety measures may include:-
- a. Emergency exit LED strip lighting, or some other form of emergency escape lighting;
 - b. An emergency 'grab bag' containing:-
 - i. Diving mask,
 - ii. Dive knife in scabbard,
 - iii. Waterproof torch,
 - iv. Portable air source with affixed regulator (e.g. HEED, Spare Air etc), and
 - v. Personal Location Beacon (PLB) for each crew member,
 to be located on the vessel internally in various locations such as any sleeping quarters (foc'sle) and the wheelhouse, and externally on the back of the wheelhouse i.e. aft deck.
 - c. Should all bulky items in the wheelhouse be secured by restraining straps or bolted down?
 - d. Should external doors been modified to allow for opening against outside water pressure, e.g. be sliding doors?
 - e. Should fishermen wear an inflatable style PFD life vest with a PLB attached whenever working?
 - f. Should electronic locating technology (e.g. Vessel Monitoring System) be used to keep vessels under surveillance and to notify authorities if a vessel fails to emit its' position when not in 'closed waters'?
 - g. Should the use of quad gear in the area in question be reviewed by an appropriate industry-government working group?
 - h. Should fishing vessels be fitted with self-releasing and self-activating EPIRBs, fitted to the wheelhouse roof, clear of obstructions?
 - i. Should trawl nets have a 'quick release' mechanism, similar to the quick-tow-release in tugs, and/or a "drag" function in net winches, be reviewed by an appropriate industry-government working group?
 - j. Should there be cessation of the practice of 'grandfathering' fishing boats into exempt categories where fundamental issues such as stability are concerned?

5. Was the search and rescue operation in each of these incidents carried out with all necessary expedition and coverage?

- [5]. The second task in any inquest is for the coroner to make comments on anything connected with the death investigated at an inquest that relates to public health or safety, the administration of justice, or ways to prevent deaths from happening in similar circumstances in the future⁷.
- [6]. The third task is that if I reasonably suspect a person has committed an offence⁸, committed official misconduct⁹, or contravened a person's professional or trade, standard or obligation¹⁰, then I may refer that information to the appropriate disciplinary body for them to take any action they deem appropriate¹¹.

Factual Background & Evidence

The Cassandra

- [7]. The FV *Cassandra* was a prawn trawler. It was appropriately registered and the master, Mr Matthew Roberts, held appropriate qualifications as a Skipper Grade 3 and Marine Engine Driver Grade 3. The vessel itself was approximately 17 metres in length, 5 metres in breadth, and had a gross total tonnage of 41.76 tonnes. It was carrying two persons on this trip. Both were described as very good employees, 'like family', and had excellent trawling capabilities which I accept. There is no suggestion that they were other than experienced fishermen.
- [8]. The vessel was fitted with a Vessel Monitoring System (VMS) which 'polls' (or pings, it simply emits a radio signal) at hourly intervals in the area¹² they were then operating. The system was working. They departed Bundaberg on 31 March 2016, and steamed east before rounding the northern end of Fraser Island and then headed south to an area north-east of Waddy Point, Fraser Island. They commenced trawling at about 6 PM that evening, and continued

⁷ *ibid* s.46(1)

⁸ *Ibid* s.48(2)

⁹ *Ibid* s.48(3)

¹⁰ *Ibid* s.48(4)

¹¹ In these findings I address these three tasks in their usual order, s.45 Findings, s.46 Coroners Comments, and then s.48 Reporting Offences or Misconduct. I have used headings, for convenience only, for each of these in my findings

¹² Different fishing areas causes it to poll more frequently, with hourly polls the least frequent mode. VMS is described as providing 'positional data' to the Quota and Vessel Monitoring Division of the Department of Agriculture and Fisheries (Qld) (DAF). Exhibit *Cassandra* B.1 at p.9 is a diagram reconstructing the vessel's movements reconstructed from its' VMS polling. This very clearly demonstrates how VMS polling 'tracks' vessels. This tracking information is also made available to assist in initial Search & Rescue operations. That is an indication of its' utility in establishing a vessel's known movements.

until about 6 AM on 1 April 2016. They continued this trawling routine for the next few days. That period of time was uneventful.

- [9]. On the morning of 4 April 2016 at 2.28 AM the VMS polled the last known or recorded position of the *Cassandra*.¹³ The vessel was then observed by a nearby trawler fisherman who saw its' boom lights at 3.05 AM, and then saw that they appeared to be 'switched off'. I think it is likely that at around this time¹⁴ the boat capsized. It was first located after dawn floating upside down and partially sunken at approximately 6:30 AM by the owner and master of another fishing vessel which had also been working nearby. The master of that vessel, Mr Taylor, alerted authorities and a Search and Rescue (SAR)¹⁵ mission was commenced. The vessel finally sank at a little after 7.20 AM¹⁶. No one survived the capsizing event and tragically Mr Roberts and Mr Chivers have never been located.
- [10]. The *Cassandra* was located on 7 and 8 April 2016 by the QPS Water Police in the vicinity of the last known co-ordinates of the vessel. It was in forty-seven metres of water. The depth, sea, and weather conditions, meant that it could not be dived upon, and so arrangements were made for a Remote Operated Vehicle (ROV) to be sent down to survey¹⁷ the vessel. The vessel was located on the sandy seafloor in an upright position with damage sustained to the bow, rigging and nets¹⁸. No sign of the remains of the two missing crew were made despite the ROV being able to be manoeuvred into the structure of the vessel.
- [11]. The images captured by the ROV were beneficial to experts later assessing theories as to why the *Cassandra* capsized¹⁹.
- [12]. As there were no survivors to the sinking of the *Cassandra*, information obtained from experts, and from persons working in the area that night, are useful to determine, or perhaps exclude, theories as to why the vessel capsized. It is clear from the footage obtained that there was no structural defect nor breach of the hull sustained by the *Cassandra* whilst she was afloat. That is she was not struck by an object such as a sunken shipping container, nor another vessel, and the hull was not breached. Whilst video footage shows deformation at the bow bulb this is consistent with this being sustained as the vessel settled on the bottom, bow first. There is certainly no hole in the hull. Clearly I can rule out that there was a structural failure of the vessel, or

¹³ It should be noted that DAF "Fail to Poll" data records a failure to poll by *Cassandra* at 3:38am: Exh: G.19.4.

¹⁴ And certainly before 3.28 AM it overturned and the wheelhouse likely was flooded as its next scheduled 'poll' (3.28 AM) certainly did not occur.

¹⁵ 'SAR' is the commonly used official abbreviation

¹⁶ At 7.20 AM the stern was noticed to start to sink quite visibly, then the entire hull slipped below the surface between 1 and 5 minutes later.

¹⁷ Take video footage and search the vessel as images are streamed live to the operator on a vessel above.

¹⁸ Interpretation of that damage assists in including and excluding possible causes.

¹⁹ ROV's are a costly exercise but they capture significant information which is very beneficial to the later determination of why a capsized occurred. I express my appreciation that the ROV process was utilised.

collision with another vessel or object whilst afloat, as the cause of the sinking.

- [13]. From the information given by Mr Taylor it is very likely that when he last saw the boom lights ‘switch off’ that is the moment that the vessel overturned which was at 3:05 AM. The lights appearing to switch off is completely consistent with them suddenly being submerged under water. The vessel was quite some way from him and he was steaming to the north ‘shooting away’, as he termed it in his statement, and so did not give it much further attention as the lights were well off in the distance behind him. Mr Taylor also gave evidence that the area where the *Cassandra* was then fishing is known to be an area where there are pinnacles or outcrops on the sea bottom, particularly south of that area, indeed he has experienced a number of nasty hook-ups²⁰ in that area. He also said that during the night the wind was a consistent twenty knot south-easterly, gusting to twenty-five knots, and the tidal movement was minimal. The conditions were safe to fish and not anything out of the ordinary²¹ or beyond the capacity of the *Cassandra*. This excludes any unusual weather event as being the reason for the capsizing although the conditions were such that it hampered search efforts as visibility²² was reduced as the weather began to deteriorate.
- [14]. One vessel, *Master Suarni*, the day before had gone to the southern end of the fishing grounds and sounded the bottom using their depth sounder in an effort to catch more prawns. They located a number of pinnacles on the seafloor in this area and marked those on their chartplotter. Why that is of significance is that the night the *Cassandra* went missing the skipper of this vessel estimated seeing the *Cassandra* about 0.30 or so nautical miles (about 555 metres) from the pinnacles they had earlier plotted.
- [15]. One skipper who was working that night was Mr Clark. He had trawled regularly in the area where the *Cassandra* was located, in fact he had a number of previous tracks on his chartplotter showing the area he had worked. He stated that ‘there is a bit of reef in that area’ and if you were not familiar with it then you could possibly get hooked up on it. He said that in the area where the *Cassandra* was located you could get hooked up to the west and also to the south, and that he would not work any further south from where the *Cassandra* was trawling.
- [16]. The history of the vessel is that originally it was a trawler, but through a period of time it was changed over to work as a deep water line fishing and spanner crab vessel. In 2012 it was returned to its original configuration as a trawler and underwent a significant refit which included certain modifications such as a bulbous bow, relocation of trawl winches and controls, hydraulic

²⁰ His nets being caught on the rocky seafloor structures.

²¹ A number of fishermen out that night confirmed that, for instance Mr Wagenknecht and Mr Lee. The BOM recorded wind speeds (wind speed and wind gusts) at both Double Island Point (slightly south of the incident location) and Lady Elliot Island (slightly north of the incident location) at the relevant times independently confirms this (see exhibit *Cassandra* B.1).

²² Sea spray onto boat windows, white caps and waves, all making the task of seeing someone treading water more difficult.

tank and try net winches amongst other modifications. When the owner of the vessel spoke with the then skipper, Mr Roberts, which was a few days prior to the incident, he did not indicate any problems with the vessel.

- [17]. A marine safety inspector from Maritime Safety Queensland inspected the vessel on 9 February 2015 and issued three non-compliance Improvement Notices which related to the safety management system, life raft and hydrostatic release unit, and issues with a life jacket (the reflective tape had deteriorated and the light was not working). None of these related to the specific operational aspects of the vessel rather were more directed to safety equipment.
- [18]. Issues were raised during the investigation of the incident, about the stability of the vessel. This is somewhat difficult to accurately assess as no vessel survey was required after modifications were undertaken. From the evidence I cannot resolve the issue as to whether the *Cassandra* was fully compliant with all stability requirements, as records of modifications and their affect were not available. Perhaps the only conclusion available on this issue is that stability alone was not the sole reason for the vessel's capsize, although it is more probable than not that rollover stability may have been 'a' factor, but not 'the' critical factor if the capsize occurred in the way the events are considered to have happened. The most critical factor in my mind was the method of retrieval of the snagged net which I deal with below. The "stability" of a vessel is its ability to right itself when subjected to a substantial heeling lever. A decrease in stability, *ie* the "righting" ability, while it may not, in and of itself, be enough to cause a capsize, may reduce the "reserve stability" which every vessel should possess. In the event of a significant heel to one side, a reduction in this reserve stability may be the difference between the vessel being able to right itself, or not.
- [19]. It appears to be common ground between all the experts that from a review of the vessel and its' configuration on the ocean floor (how the nets had been set, damage sustained, and the amount of line out), particularly with the benefit of the evidence of the experienced Mr Ehrke, is that the vessel suffered a 'hook up' on some object on the ocean floor, likely a rocky pinnacle or reef. They have then winched in the net's line as tightly as possible to try and dislodge it from the reef. A crude analogy is when a fisherman has a snagged hook and tightens the line as much as possible to see if the snag breaks free²³. From Mr Ehrke's evidence he believed that in view of the depth of the water and the length of line out²⁴ from the particular winch that the *Cassandra* was almost directly overhead of the object on which they were hooked up. The lines would have been very taut, even causing the boat to list to that side, and then the hook up has suddenly released, and the boat suddenly rolled, quickly and likely violently, to the opposite side where it heeled so much that it passed its' stability point and rolled over. This was consistent with the debris found on the seafloor and damage to the rigging. Very likely the upturned vessel, now free of the hook up, has drifted from that hooked up spot before it finally sank

²³ Fishermen will be familiar with the very sudden release of tension as the hook comes free from a snag.

²⁴ The amount of main and bridle trawl wire.

about four and one-half hours later. Where it was located was an entirely sandy seafloor without any reefs or pinnacles.

- [20]. Mr Ehrke suggested alternate methods²⁵ of winching in a hook up to reduce the chances of a roll over. He also made pertinent observations about certain issues canvassed at the inquest which I address later.
- [21]. In this case the EPIRB was not activated and the life raft did not self-release to the surface. The life raft was fitted in a cradle on the roof of the wheelhouse. The life raft itself hydrostatically released from its cradle but the life raft's painter²⁶ become entangled on the aerial, ropes, and wires nearby such that the life raft was left suspended a few metres above the vessel on the ocean floor. The EPIRB was not activated, very likely because there was insufficient time for either of the crew to get to it as it was a manual activation style EPIRB.
- [22]. It appears reasonable to conclude that whilst the life raft was appropriately packed and operated as intended²⁷, it simply became entangled by its painter. Finding an appropriately clear area for a liferafts placement in a cradle on a vessel is always difficult, and the most common location is the roof of the wheelhouse where it was in this instance. Of course in a complete roll-over the wheelhouse roof becomes the lowermost point of the vessel. It is simply unfortunate there is so much possibility of an entanglement from other obstructions when a vessel rolls, but perhaps the weak point of the painter should be where it attaches to the D-ring right on the life raft itself, rather than there be a rope of quite some length which can be entangled as occurred here. The difficulty is that a painter is often required to secure the life raft to the vessel if it is slowly sinking to avoid the life raft drifting away. It is a difficult competing issue (the length of a life raft painter) which is hard to resolve. The issue of the EPIRBs being self-activating is already legislated (with an appropriate phase-in period done for commercial reasons which I accept). I will deal with this in my Recommendations, as I will for the issues relating to the grandfathering of these vessels, and SMS²⁸.
- [23]. On the evidence available I find that the likely reason for the capsizing of the *Cassandra* was that it that suffered a hook up on a seabed structure such as a reef or rocky pinnacle, and when the crew attempted to free the net they applied significant force to tension the net's line, then it freed suddenly and without warning which caused the vessel to then rollover to the opposite side and capsize. Very likely the two crew were then on the aft deck attempting to free the net and after the vessel rolled they have either suffered a blow to the head which debilitated them and drowned, or simply drowned when entangled in gear or trapped under the vessel, and were unable to escape within time. Their bodies have never been located likely because they have simply drifted from the capsized vessel well before the wreckage finally settled some hours later. In these circumstances it does not appear that a third crew member

²⁵ The use of a snatch block over the wire to bring the net's line to the vessel's side would be an alternate.

²⁶ Simply a rope which is positively buoyant, that is it floats

²⁷ By this I mean it self-deployed from its' cradle and started to self-inflate

²⁸ Safety Management System

would have prevented the incident as it was the method chosen to try and free the snagged net which led to the capsizing. Better knowledge of the area where it is safe to trawl, and better knowledge of safe retrieval of a snagged net, may possibly have prevented the tragedy occurring.

The Dianne

- [24]. The *Dianne* was a vessel of approximately 18 metres in length. It originally worked in fishing grounds off Tasmania and had successfully worked in Bass Strait where on occasions it had encountered seas described as being between six and eight metres in height which it reportedly had handled successfully. That was many years prior to the incident which is the subject of this inquest and before certain²⁹ modifications to the vessel.
- [25]. Mr Leahy and his business partner, Mr Kelly, had acquired the vessel and undertook some minor modifications and revisions to it to enable it to be used as a diving vessel in the coastal waters off Queensland to dive for bech-de-mer (sometimes referred to as sea cucumber³⁰). The vessel had undergone and complied with a stability assessment in 2009. The changes made to the vessel were to enable it to be used for bech-de-mer diving or harvesting and included additional refrigeration capacity placed on the aft deck, a metal canopy over the aft deck, and some deployable outriggers for spreading air lines or air hoses to the divers then working the sea floor below the vessel. There was also an area on top of the aft deck canopy where steel compressed air tanks were stored. There was some focus at the inquest about whether any of these revisions or changes made any significant effect on the stability of the vessel. Put simply the professional opinion, which I accept and I find, were that these changes would not have materially affected the vessel's stability although it might have had a slight negative effect on its rate of recovery³¹ after heeling over, but it was not of any material significance. Accordingly it appears appropriate to exclude that as a possible factor in the causation of the capsizing.
- [26]. The decision to depart the port of Bundaberg was originally scheduled to be on Saturday 15 October 2017 but because of the then prevailing weather the skipper Mr Leahy, in consultation with the crew, decided to delay departure for one day. There was a suggestion by some that perhaps the conditions at the time of their delayed departure from Bundaberg, in light of the forecast conditions for the next few days which were not entirely favourable conditions, meant that I should find that it was unsafe or unwise for the vessel to leave port at that time. Whilst in this instance the skipper made the decision to leave in consultation with the crew, such decision ultimately rests with the skipper. The sole survivor of the incident was Mr McDornan and he said in his evidence that no member of the crew expressed any reservation about departing that Sunday afternoon, nor was there concern regarding the forecast weather or sea conditions for where they were headed (*The Bunker* group of

³⁰ And I am indebted to Mr Ross for widening my knowledge of bech-de-mer harvesting, including the commercial aspects of their harvesting, diver paid price and retail sale price.

³¹ By this I mean the speed of the vessel or time taken when self-righting

islands), for which the weather was forecast to become more favourable whilst they steamed. That said, the seas were between two and three metres as they departed, and the evidence was that the boat was handling this well. This indicates to me, and I conclude, that the vessel could handle the seas that they anticipated to encounter. Accordingly, I am not at all critical of the decision by the skipper (without dissent from the crew) to depart Bundaberg that Sunday afternoon.

- [27]. As the vessel steamed in an approximately northerly direction it was making way at about seven knots. Mr McDornan said that the vessel was handling the conditions well and had settled into a very routine motion of rolling as swells passed under the vessel as they made their way north. The skipper was at the helm and clearly conditions were comfortable for these experienced seamen such that the crew were all in their bunks, either resting or simply passing the time like Mr McDornan who was watching a movie. None of them were concerned about the conditions, nor the vessel, at that time.
- [28]. At around 7.15pm the vessel was about five nautical miles due east off the coast from the Town of 1770, which is a small township just north of Agnes Waters. The Town of 1770, even though it is a small community, boasts a Volunteer Marine Rescue Squad or base. Whilst its radio room was not monitoring shipping at that time, as usually it is only monitored at what might be called daylight hours, the dedicated local staff still monitored radio traffic at night at their home. Of course, in the events which occurred no radio communication was able to be sent by the crew of the *Dianne*. When the capsizing occurred, the first notification of an emergency was the mayday call made the following morning by another vessel, and this was picked up and acted upon promptly by VMR members³².
- [29]. The nature of this capsizing event is fortunately known to us because Mr McDornan survived. He gave evidence at the inquest and was a very impressive witness. He was able to recount very clearly that it was at about 7.15p.m., whilst the vessel was steaming north, he felt the vessel to do its usual roll to port, but on this occasion it did not commence to 'come back' to starboard, but instead continued rolling to port. Being experienced, he simply felt it going further to port than it had previously, and so instinctively braced himself against the wall of the cabin in which he then was; but he immediately knew something was wrong. What is of some importance was it felt like any other motion of the vessel that night, it was not violent nor accompanied by any other action 'out of the ordinary' as can occur with a 'freak wave'³³. He never said he felt the vessel start to come back to starboard, then roll to port further, rather it was one continuous roll to port.
- [30]. As he felt the boat continue to roll to port and as his bunk was closest to the companionway, he climbed up the steps from the foc'sle or sleeping cabin where he was resting with the other crew members, and clambered into the wheelhouse. He said that in the time that it took him to climb the

³² Which is a credit to their diligence as the distress radio call was made outside usual base manned hours.

³³ Wave action or wave noise as distinct from simply a large swell

companionway steps the vessel had gone from being on its side to completely rolling over (such that climbing up the companionway was now climbing down). He made it into the wheelhouse just as the vessel finished rolling and in fact the skipper, Mr Leahy, was thrown from his helm chair onto Mr McDornan. They were then in complete darkness and water was racing into the wheelhouse, already being at his chest level. Other crew members were also in the wheelhouse then. Mr McDornan attempted to open the door at the rear of the wheelhouse but it was against the pressure of the water that was trying to rush in. He eventually was able to force the door just enough to squeeze his body out. He also tried to locate the EPIRB within the wheelhouse whilst trying to force open this door. He was unable to locate it, very likely because he was trying to force open a door whilst operating in a situation of complete spatial disorientation where 'up' is now 'down', 'light' is now 'dark', unsecured objects are now obstacles, and water is rushing in. Mr McDornan, in the dark and totally underwater, managed to feel his way across the back of the wheelhouse structure and then escape the debris to surface a couple of metres from the upturned vessel. He quickly assessed that the vessel had completely rolled over and that he could hear a motor revving loudly but that the propeller which was then partially in the water was not producing any wash (that is, there was no thrust). That suggests to me that the main engine was running but the propeller was not turning under any power from the motor. Mr McDornan, in his evidence at the inquest, suggested that perhaps the motor he heard could have been a generator, whilst in his statement³⁴ to the police very shortly after he was rescued he indicated that he thought the engine noise he heard was the main engine of the vessel. This appears more probable to me, and I find, that it was the main engine rather than a generator that he heard. It is of course possible that both were still running at this time.

- [31]. Mr McDornan eventually made his way onto the upturned hull and heard activity from within the vessel. He called out to crew to get to the EPIRB but they were unable to. He recognised two of the voices from inside the vessel and called to them, and tapped on the upturned vessel for a number of hours until about 10.30p.m. when he could hear no further activity from inside the vessel. Over the period of time from 7.15p.m. until about 11.15p.m. the vessel slowly sank lower in the water, stern first, before it finally slipped under the surface at about 11.15 p.m. Mr McDornan treaded water for a period of time but no-one else had surfaced, and nor did the vessel's life raft.
- [32]. One comment I can very confidently make at this time was that these six men who were lost were all extremely fit and experienced divers. As Sergeant James Hall of the QPS Dive Squad noted "*if any person would have been able to make their way out of this vessel it would have been these men*"³⁵. I agree with that observation³⁶.

³⁴ Exhibit F.1.1 at paragraph 41.

³⁵ Two crew members' bodies were retrieved by QPS divers later, but the other four were not. Perhaps, but I cannot precisely determine, they escaped the vessel but were lost to the sea.

³⁶ I should add that the vessel was operated completely 'dry' with no alcohol, nor illicit substances. These were dedicated commercial divers, all extremely fit and responsible men of the sea.

- [33]. After a short while, Mr McDornan determined he was approximately offshore from the Town of 1770, and so then commenced to swim towards shore. He was of course battling seas of two to three metres, darkness, wind, rain and current³⁷. He swam all night, an incredible act of endurance, and at about 6.30am the following morning, by pure chance, an approximately 40ft. sailing catamaran, which at that time had simply chosen to relocate from its' anchorage of the prior night, sailed past him. As it happened, the persons on that sailing catamaran were also members of a VMR squadron, and when they heard what they thought was a cry for help they did precisely what is required, and the first person who spotted Mr McDornan in the water kept their eyes on him at all times whilst the other crew member turned the boat around to come and pick him up. Mr McDornan is an extremely lucky man and no doubt will be ever grateful to the actions of these passing sailors. Those sailors then made a mayday call advising that a vessel had capsized and that there were six missing crew. From the first moment of the capsize to the first time that any rescue authority was aware that the capsize has occurred (and there was a potential loss of life) was nearly 12 hours³⁸.
- [34]. Despite the swift action by rescue authorities and a detailed, thorough and co-ordinated search, none of the six missing crewmen were found alive. In the upturned hull only two deceased crew members' bodies were located. What happened to the other four bodies cannot be precisely determined, but it is clear, and I find, that those four persons are deceased, likely drowned.
- [35]. In respect of the coordinated air and sea search, I make no criticism whatsoever. It was a detailed and thorough search. The problem was that the rescuers were really starting after a 12-hour delay. In modern times and with the technology then available and being used, that is simply unacceptable.
- [36]. The important issue for me to determine is, if I can, *why* the *Dianne* capsized at about 7.15p.m.
- [37]. When the *Dianne* was dived by the QPS on the day after the incident they took Go-Pro footage of the vessel which shows it upturned resting on the bottom. There is no external damage to the hull so there is no suggestion it struck an object, or in some way the hull was breached. There was observed to be a rope wrapped around the propeller. Evidence was given that this rope is one of the securing lines for a drogue which is towed behind the *Dianne* when divers were working the sea floor, harvesting. The drogue slows the vessel to the diver's working speed. Of course, the vessel was only steaming and not working when the capsizing occurred, so it was explored as to where and how the drogue was stored when steaming. The evidence was that it was stored on the steel duckboard which sits proud of the stern. The drogue is folded and then lashed down using some of its ropes. In calm seas the duckboard sits above the water. On this night there was significant seas described as two to

³⁷ Likely also cold, minor injuries, and emotional distress.

³⁸ or was it? I will further explore this when I comment on the vessel monitoring system (VMS operated by the vessel and tracked by the Department of Fisheries)

three metres in height. A wave buoy in the area³⁹ recorded a maximum wave of 3.69 metres.⁴⁰ This is not a sea the vessel was reportedly unable to handle; indeed evidence was that it had worked in Bass Strait in seas of up to six or eight metres; but on this night the seas were on the aft-quarter, and the evidence was that this is the most problematic direction for troubling seas when considering vessel stability.

[38]. A number of theories were explored as to how the rope from the drogue came to be around the propeller when first inspected by police divers. One theory is that the stored and folded drogue on the rear duckboard has somehow worked its way loose whilst the vessel was steaming perhaps being brought loose by the action of the seas that evening. The then loose drogue ropes or lines have then entered the water and due to the effect of the turbulent water around the stern of the vessel they have been drawn into the propeller and become wrapped around it, stopping it. That then means the forward propulsion of the vessel is lost, leaving it at the mercy of the seas. A second theory was that merely the state of the seas that evening has at one stage caught the vessel at just the right moment to tip the vessel past its point of self-righting, or stability, sometimes referred to as a 'zero-point'. The vessel has then simply been rolled by the actions of the significant waves⁴¹, and then whilst the vessel was either rolling, or rolled over, the ropes from the drogue have come loose due to the angle the boat was then on (i.e. at or near 90 degrees if when rolling over) and became wrapped around the propeller shaft⁴². The third theory was that after the vessel sank, through the action of the tide turning the propeller, the ropes have wound themselves onto the propeller shaft. Whilst there was a great deal of time spent at the inquest exploring this issue⁴³, and I specifically directed the parties to address me on this issue, I am unable to conclude which of the first two possibilities is more likely, although I can confidently exclude the third, that the action of the tide solely caused the ropes to become entangled on the propeller shaft. Accordingly, and while understanding the uncertainty this may leave, I consider I must record an 'open verdict'⁴⁴ in relation to this discreet issue.

[39]. In considering this issue I have carefully considered the evidence of the witnesses provided but I am of the view, and it is clear in my mind, that I

³⁹ Although some distance away as these wave buoys are placed at various locations along Qld's coastal waters

⁴⁰ It might be significant that the highest wave for the period was 3.69m, recorded at about 7:30PM, on 15 October which was very close to the time of actual capsizing. Exh: F.2 at para [6.11]

⁴¹ And most likely, simply a freak larger swell which lifted the vessel at just the wrong time and overwhelmed it

⁴² It is also possible that in the time between the vessels' fully rolling over and when Mr McDornan surfaced that the drogue ropes, now in the water, have been pulled in by the turbulence created by the propeller and these ropes then fouled and stopped the propeller before Mr McDornan surfaced.

⁴³ Whilst it was specifically covered in Submissions at the inquest a party also forwarded a written submission quite some months after the inquest. That submission raised nothing new and was not specifically considered by me as the particular exhibit it focussed upon was something I had already viewed and considered before the inquest even if parties had not.

⁴⁴ An "open verdict" may be recorded where there is simply insufficient evidence to support a finding to the required standard of certainty, as to how a particular event has occurred: see *eg. Jervis on Coroners* (12th Ed, 2002) at [13-37]. This does not indicate a failing on the part of the inquest, but is inevitable in some cases where multiple explanations of an event cannot be entirely excluded.

cannot determine precisely when the drogue rope came loose (that is whilst the vessel was still upright or when first heeling over in the action of the capsize). If the drogue, whilst the vessel was steaming, had worked free from how it was stored on the rear duckboard and fouled the propeller then this would have slowed the forward momentum of the vessel through the water. An experienced skipper like Mr Leahy would have likely felt this and called out to the crew but Mr McDornan said no such call was made by the skipper. What is clear is that the propeller was not producing wash when Mr McDornan made his way to the surface. He observed that the propeller was not turning, and no wash was being created, but he heard an engine running and the vessel was found in forward gear. As I said earlier his first statement to the police shortly after the incident was that he thought that it was the main engine he heard running, and I think this is the better conclusion from his evidence, rather than his later evidence at the inquest that perhaps he had heard the generator engine running. As I stated the vessel when found by the police had forward gear engaged and the ropes can be seen to be wound very tightly around the propeller and shaft which indicated to me that the rope wound around the propeller whilst drive was being supplied by the engine rather than, as was suggested, it has merely worked its way around the propeller through the action of the tide turning the propeller. I appreciate the significance this discreet issue being an ‘open finding’ may have. It is not a conclusion I reach lightly, but it is the only conclusion of which I feel actually persuaded. How the drogue came to work its way free is clearly because it was insufficiently lashed down on that evening, but precisely ‘when’ it came free I cannot conclude.

[40]. Turning to other matters there is one aspect of the incident I am compelled to comment on. This is the twelve hour delay before authorities were notified that the vessel had capsized. Of course the primary responsibility for notifying of a marine incident such as a capsize or vessel in distress rests with the skipper and crew. This can be done by radio or EPIRB. The *Dianne* was set up with two EPIRBs but with how quickly a capsize can occur, and how disorientating such an event is, means that manual systems of notification or activation sometimes simply cannot occur.

[41]. I am in absolutely no way critical of Mr McDornan not being able to access the EPIRB that evening. It is simply the case that sometimes calamitous circumstances prohibit manual activation occurring and that is why authorities such as AMSA, commendably, are already moving to the preferable float-free EPIRBs which will automatically activate. Of course, that will remain one of the primary notification or communication systems, but if the EPIRB in any way becomes trapped by debris and cannot reach the surface to broadcast its radio signal then that system is inoperable. For all commercial fishing vessels such as the *Dianne*, and the *Cassandra*, there already exists an external monitoring system tracking the movements of the vessel. The vessel monitoring system (VMS) by the Department of Fisheries was introduced in approximately the early 1990s. One of the bases upon which the system was “sold” to the industry was the vessel monitoring/tracking and its’ safety attributes. In the affidavit material provided by the Department of Fisheries to the inquest (it was stated on numerous occasions), and even in evidence it was

told to me on at least four occasions, that the VMS system did not have a safety function. As the inquest progressed, Counsel for the Department of Fisheries quite rightly and properly in my opinion, conceded for her client that the VMS system does have a safety component or function such that when a regular radio signal or poll is *not* issued by the vessel, the monitoring computer will generate a report that a poll has been missed.

[42]. I cannot let the inquest pass without making comment critical of the DAF. Not only did that Department adopt an approach⁴⁵ which was in my view simply bureaucratic obstruction in an attempt to ‘defend’ their then position, the worst aspect was that it took until sometime during the inquest before any concession was made by the Department that not only was this function of the VMS currently available, and that it already exists, but that it had existed for quite some time. It is very clear to me, and I find, that this safety attribute of the system was a basis upon which it was “sold” in the 1990’s to commercial fishery operators before its’ implementation. Mr Barry Erkhe gave evidence as to how the VMS system was sold to fishermen including that safety or monitoring aspect. He was a most impressive witness (and clearly he has a long time service to the fishing industry recognised through his OAM). There was never any witness called by DAF to counter Mr Erkhe’s statements as to when and where and by whom he was told of the safety attribute of the VMS. Mr Erkhe named the individual from DAF, but he was never called, nor was there any explanation given for that witness not being called. To me this is the most concerning aspect of this inquest regarding safety. It was also clear in the Department’s own material from the 1990’s that safety was identified as an attribute of the system⁴⁶.

[43]. What I find unacceptable is that a Government Department can ‘sell’⁴⁷ a system to the industry claiming it has a benefit to the industry but then not implement the system with that benefit; but worse is to take a demonstrably-wrong position to claim that the system cannot do this function and maintain that in their statements to the inquest. Bureaucrats⁴⁸ such as these need to understand that they exist to serve the public and carry out the functions of government. The Department would be wise to investigate and learn how the industry’s concerns on this safety aspect could have been brushed away and not acted upon for so many years, especially so after inquests on precisely this issue previously⁴⁹.

[44]. Noting the concession given by DAF at the inquest that they will enact the ‘failure to poll’ alert into the QPS system, that is helpful and very pleasing to see. It appears the sensibilities of their counsel were heard over any lingering departmental reluctance to implement this. It will be a Recommendation I will

⁴⁵ Each of their statements, indeed their initial evidence at the inquest.

⁴⁶ It is particularly disappointing when a very similar situation has previously been identified in Western Australia: see *Inquest into the Loss of the MV Returner*, Coroner Linton, February 2018: Exhibit E.6 & E.6.1.

⁴⁷ It is not a ‘sale’ when it is simply imposed

⁴⁸ I only direct my comment to those who displayed this approach, it must be a very very small number as most I encounter understand their service to the public duty

⁴⁹ Note especially the clear observations by then State Coroner Barnes in the *Inquest for Rodney John BAKER*, 15 May 2006, p.9, 3rd and 4th paragraphs: Exhibit E.2.

refer to later in these findings. It must be a very pleasing day for persons like Mr Erkhe to see action he has pursued for nearly 30 years to finally occur.

[45]. It is helpful to appreciate what occurs when a capsizing event happens. Information to the inquest is that it has been said in overseas studies that when a person rotates underwater and their gravity reference is lost, disorientation is inevitable, and so it is difficult for the occupants of a capsized vessel to escape. Darkness increases disorientation. It has been said that the in-rushing water has four major effects, all of which can lead to drowning. The first is panic because the individual is exposed to potential drowning; the second is uncontrolled hyperventilation and reduction of the ability to hold one's breath; the third is being tossed around in a confined space like the wheelhouse of a vessel which can lead to intense disorientation. The fourth effect, immersion in cold water, exacerbates the first two. According to a study by NATO, only those who have experienced disorientation in an underwater escape stimulator have a good chance of understanding the situational problem and solving it. Even experienced professional divers are surprised by the profound sense of disorientation that they suffer the first time they try the simulator. That study revealed that in spite of their lengthy experience, sixteen out of twenty-four divers testing underwater escape hatch illumination became seriously disorientated and needed assistance⁵⁰.

[46]. This experience was confirmed before me, in this inquest, by Sergeant James Hall, of the QPS Dive Squad. Sergeant Hall has experienced simulated capsize on a number of occasions; and he dived the *Dianne*, and was involved in the recovery of the bodies of two of the crew. His evidence as to what the victims of these tragedies would have faced in these circumstances demands the most careful reflection by those with the power and authority to introduce meaningful safety improvement: "Take a room, turn it upside down, fill it with water, take away any visibility, with items being tossed everywhere – that's what it would have been like." For the layman - think of the first time you were dumped by a large wave in the ocean, thrown around and disorientated as to which way is up⁵¹.

List of Inquest Issues Answers

Coroners Act s. 45(2): 'Findings'

[47]. Dealing with the list of issues for this inquest the answers are as follows:-

[48]. Issue 1. My primary task is the information required by section 45(2) of the *Coroners Act 2003*, namely:

⁵⁰ See Exh G13: NATO Advisory Group for Aerospace Research and Development, study entitled "The human factors relating to escape and survival from helicopters ditching in water", and Exh G.12: TSB Canada, Marine Incident Report No M96L0037, Capsize of fishing vessel "*Stefane PII*"

⁵¹ That is a situation without darkness or obstruction by objects within a boat. There is also an absence of fishing gear such as nets, ropes, wires etc. Everyone would be familiar with the less panic and greater calm that repeated experience of the situation teaches an individual, which is to remain calm, orientate, and then reach the surface.

- a. Who the deceased person is,
- b. How the person died,
- c. When the person died,
- d. Where the person died, and
- e. what caused the person to die.

[49]. For each deceased or missing person this is set out below using the above format, regrettably I find that each has died. The specific findings for each person is:-

FV Cassandra

Mr Chivers

- a. David Barry Chivers;
- b. Vessel capsized likely whilst retrieving a snagged trawl net from a seabed 'hook up';
- c. 4 April 2016;
- d. Coral Sea, approximately 5 nm east off Waddy Point, Fraser Island, Qld;
- e. Drowning.

Mr Roberts

- a. Matthew Neil Roberts;
- b. Vessel capsized likely whilst retrieving a snagged trawl net from a seabed 'hook up';
- c. 4 April 2016;
- d. Coral Sea, approximately 5 nm east off Waddy Point, Fraser Island, Qld;
- e. Drowning.

FV Dianne

Mr Bidner

- a. Adam Jeffery Bidner;
- b. Vessel capsized the cause of which is an Open Finding;
- c. 16 October 2017;
- d. Capricorn Channel, Coral Sea, approximately 5 nm NNE off the Town of 1770, Qld;
- e. Drowning.

Mr Feeney

- a. Zachary John Feeney;
- b. Vessel capsized the cause of which is an Open Finding;
- c. 16 October 2017;
- d. Capricorn Channel, Coral Sea, approximately 5 nm NNE off the Town of 1770, Qld;

- e. Drowning.

Mr Hoffman

- a. Adam Ross Hoffman;
- b. Vessel capsize the cause of which is an Open Finding;
- c. 16 October 2017;
- d. Capricorn Channel, Coral Sea, approximately 5 nm NNE off the Town of 1770, Qld;
- e. Drowning.

Mr Leahy

- a. Benjamin Patrick Leahy;
- b. Vessel capsize the cause of which is an Open Finding;
- c. 16 October 2017;
- d. Capricorn Channel, Coral Sea, approximately 5 nm NNE off the Town of 1770, Qld;
- e. Drowning⁵².

Mr Sammut

- a. Christopher David Sammut;
- b. Vessel capsize the cause of which is an Open Finding;
- c. 16 October 2017;
- d. Capricorn Channel, Coral Sea, approximately 5 nm NNE off the Town of 1770, Qld;
- e. Drowning.

Mr Tonks

- a. Eli Davey Tonks;
- b. Vessel capsize the cause of which is an Open Finding;
- c. 16 October 2017;
- d. Capricorn Channel, Coral Sea, approximately 5 nm NNE off the Town of 1770, Qld;
- e. Drowning.

[50]. Issue 2. With respect to the FV *Cassandra*:-

- (a) what caused the vessel to sink on 4 April 2016?

In respect of the FV *Cassandra*, the vessel sunk because of the actions of the crew following a hook-up of a trawl net on the ocean floor. From the evidence received and the opinion of experts, it appears very likely that following the hook-up, the skipper attempted to winch in the net (but kept the load point about 1 metre from the end of the boom) which brought the boat close to being overhead of the point where it was snagged, and then the net suddenly released

⁵² The autopsy report (exhibit *Dianne A.11*) indicates a left sided black eye (with evidence of a left eyebrow ridge fracture), so it is possible although unable to be determined with precision that he was at some time rendered unconscious, and unable to act, then drowned although he survived the initial capsize event.

with such force that the vessel violently rolled over to the opposite side due to the tension the recovered net was then under being suddenly released.

(b) was the vessel compliant with all stability requirements?

Whilst the vessel appears to be compliant with stability issues, it had been modified from a single boom trawler to a two boom, outrigger-style, trawler. The effect of that on the vessel's overall stability was never tested nor analysed after that modification was made. In my opinion, based on what the expert evidence was, it is very likely that modifications had a detrimental effect on stability, but whether it affected its overall stability such as to make the vessel dangerous as opposed to simply more prone to a capsize is unable to be determined by me. In accordance with the then current laws when built it appears that the vessel complied with stability requirements but later modifications were made, and significant modifications, which were untested as to the effect on the vessels stability.

(c) did each of the safety and emergency devices on board the vessel deploy or operate as intended or expected; and if not, could this have attributed to the loss of life or of the vessel?

It appears that the safety and emergency devices on board did not deploy nor operate as expected, in that the life raft did not release to the surface. There was no time to reach and activate the manual EPIRB, nor get lifejackets or deploy the life-raft. It cannot be said whether the presence of a life raft would have saved the lives of those on board, because it is not clear if they escaped from the vessel or entanglements after it rolled over. It is possible they may have become entrapped within the vessel or its equipment such that they first drowned. I note that neither body was located on the vessel when it was recovered.

(d) could the loss of the vessel have been avoided?

The question of whether the loss of the vessel could have been avoided is a perplexing one. It certainly appears from the evidence that if an alternate method was used to recover the snagged trawl net by the use of a snatch block, bringing the line close to the side of the boat, then it appears that a complete roll-over might have been avoided. The evidence was there was such a snatch block available on the vessel. It had not been used. Alternate methods could have been to cut the line⁵³ and leave the net adrift marked by a buoy for later recovery but fishermen are reluctant to do that as there is a financial cost in taking that action.

⁵³ There were boltcutters in the engine room of the *Cassandra* (Mr Markwell referred to in his statement, Exhibit C.3 at para. 132). This is only of use if the winching process is done slowly and methodically. If it is a sudden process there is simply no time to retrieve boltcutters and then use them. Similarly, there was suggestion that cutting the line could be done with an axe kept within reach of the winches, but this requires, again, a window of time and presence of mind to use it. If the release of tension is sudden, then the roll-over may occur without any time for the crew to take any action.

[51]. Issue 3. With respect to the FV *Dianne*:-

(a) what caused the vessel to sink on 16 October 2017?

The vessel sunk when it was overcome by the heavy seas on that particular evening. Whether a rope fouled the propeller before the vessel rolled over, or after (or even in the process of the vessel rolling over) the vessel had rolled over, I cannot determine but I do find that a rope from the drogue had fouled the propeller whilst the vessel was still at the surface. It is simply that I cannot determine to the degree of proof or certainty necessary whether the vessel was upright or overturned at that time.

(b) was the vessel compliant with all stability requirements?

The vessel certainly appeared to be compliant with all stability requirements when built and the modifications made would not have overly affected its general stability, although the modifications would have reduced to a slight degree (but to what degree I cannot say, and there was not any real suggestion it contributed to this incident) the amount of reserve stability the vessel had, that is, its' rate of ability to self-right.

(c) did each of the safety or emergency devices on board the vessel deploy or operate as intended or expected; and if not, could this have contributed to the loss of life or of the vessel?

It is clear that the safety and emergency devices on board did not operate as intended, in particular the life raft did not deploy at all⁵⁴. I am unable to determine why it did not deploy as when later tested it appeared in serviceable condition. There was a suggestion that the sinking of the vessel over a number of hours may have affected the life-raft self-deploying but I cannot determine the reason with necessary certainty. I am unable to say whether those other persons on board the vessel did free themselves and make it to the surface like Mr McDornan, but Mr McMcDornan's evidence was that no other person surfaced in the time he was there and he made a thorough check of the area as best he could in the circumstances. Accordingly, whilst the emergency and safety measures on board the vessel did not operate as intended, it appears only Mr McDornan made it clear of the vessel alive and he was subsequently rescued in what I describe as a miraculous chance encounter with passing sailors.

⁵⁴ There was no time to activate the manual EPIRB nor obtain a life-jacket or life-ring despite these being in what may be considered, readily accessible positions on the vessel. It is merely the calamitous nature of a vessel rollover which prevented these devices from being utilised.

- (d) could the loss of the vessel have been avoided?

As to whether the loss of the vessel could have been avoided Mr McDornan's evidence was that the vessel was handling the seas well as they headed north and had been doing so for well over two hours before the incident occurred. If it was that the rope from the drogue fouled the propeller before the vessel overturned, then clearly that could have been avoided by correctly lashing the drogue or even bringing it on board rather than leaving it on the duck board, but as I stated earlier whether the rope fouled the propeller while the vessel was still steaming upright I cannot determine, and leave an 'open finding' on the evidence presented to me.

- [52] Issue 4. What further safety measures (including changes to safety equipment), might reasonably be adopted with a view to preventing, or reducing the risk of further loss of life in the circumstances?

I will deal with these in my recommendations.

- [53]. Issue 5. Was the search and rescue operation in each of these incident carried out with all the necessary expedition and coverage?

- [54]. Each search and rescue was carried out diligently and promptly from when authorities first received notification of a May Day⁵⁵ distress call. Each search was extensive. The searches were in the correct area⁵⁶. What is of note was that in each search and rescue there was a delay between the time the capsizing occurred and authorities first being alerted by a May Day distress call issued from a passing vessel.

- [55]. In the case of the *Cassandra* it was a delay of a little over four hours⁵⁷, in the case of the *Dianne* it was more than twelve hours⁵⁸. In the present age of vessel monitoring, and each vessel was being monitored, it is inconceivable in my view that there can be such a delay. Delay puts lives in peril, it also increases the search area for rescue authorities making the exercise far more costly and personnel intensive.

- [56]. It must be remembered that in a capsizing event, especially at night, there can be difficulty for crew to manually activate devices and alert authorities. Automatic activation (that is without human intervention), or enquiries commenced whenever a VMS equipped vessel stops 'polling' are clearly

⁵⁵ Nautical terminology has different levels of 'urgency' of a radio broadcast. 'May Day' in the highest or most severe level, indicating life at imminent threat, the next level down is 'Pan Pan'.

⁵⁶ Indeed for the *Cassandra* debris washed ashore a few days later confirmed the search location was correct.

⁵⁷ indeed there were ten vessels in the area already searching the waters when QPS were first advised (see exhibit *Cassandra* B.1 at p.12), such is the strength of the trawling community, before commencement with a rescue helicopter and later additional assets such as fixed wing aircraft.

⁵⁸ and it must be appreciated that the first three hours Mr McDornan communicated with those inside the vessel who were alive, and the vessel did not sink for another hour.

sensible measures which can be taken (and at very little cost). It would be accepted by all that the earlier a search and rescue mission commences the greater the chances are of survival for those in danger.

Coroners Act s. 46: ‘Coroners Comments’ (Recommendations)

- [57]. It was clear in the inquest that there are a number of reasonable, practical, and inexpensive safety measures which can be implemented to reduce the likelihood of this incident occurring again, or at least ensuring a better chance of survival for these fishermen and divers who work at sea.

Minor Vessel modification, Grab Bag and PFD’s - practical steps

- [58]. There was an acceptance by all persons, including the Queensland Police Service divers, that simple steps such as emergency exit LED strip lighting⁵⁹ placed in the cabins to direct people to exits, together with emergency grab bag of dive mask, dive knife, waterproof torch and portable air source with a fixed regulator would be of benefit⁶⁰. This simple ‘grab bag’ would be in probably two locations on a vessel, the sleeping cabin and near the helm. The total cost of all these items is less than \$1,000 and emergency exit strip lighting is of very limited expense particularly as it can be retro-fitted to older vessels without significant modifications. There are also appropriate batteries which only activate once a vessel heels past a certain number of degrees and remains there for a period of time. The inquest had evidence of such products being available. Because these are practical and inexpensive steps they should be implemented, first by promoting their use throughout the industry, and then mandatory after a period of time, perhaps two years to allow owners of vessels the time to put these in place. It also allows suppliers adequate time to be able to provide the items without the consequences of an unintended rush to purchase.
- [59]. It is clear that all bulky items in the wheelhouse should be secured by restraining straps or bolted down. Again, this is inexpensive and easily done. Whether, in the case of the *Dianne*, a particular fridge or freezer had wedged itself in a companion way preventing escape by people it is difficult to fully determine, but clearly the police divers encountered a fridge wedged in a companion way or doorway, to the bunk-room. Persons also need to understand that a capsizing is a violent event, it is not like the routine rolling of a vessel over seas as the seas pass under it, so they need to be secured wisely and with bolts.

⁵⁹ Already legislated for new DCV’s (National Standard for Commercial Vessels Part C5B), but existing older vessels like the *Cassandra* and *Dianne* is what this inquest targets.

⁶⁰ The QPS divers produced a video showing how somewhat complex tasks (including replicating objects which could entrap or have to be negotiated in escaping an overturned vessel) can be done whilst using a portable air-source, including by buddy breathing.

- [60]. The question of whether external doors modified to allow opening against outside water pressure proves somewhat problematic. An inquest is probably not in the best position to explore this completely. The intended modification is certainly welcomed by all those in the industry but each vessel will depend on its own unique configuration as to how to best achieve this and balance emergency escape against the other critical functions of a doorway such as preventing down-flooding of compartments. Sliding doors may be possible on the aft side of the helm but may not be possible along the starboard or portside of the helm especially if water-tightness is a crucial function. One interesting modification or variation on this theme was raised by a family member for a next-of-kin which talked of there being a cut-out in the doorways which can be pushed out in these circumstances to allow easier manoeuvring of the door. That is another option. It was suggested, although not documented, that this is common on naval vessels. It should certainly be explored but this is a matter for the industry together with regulators to sit down and work out what options can be implemented. Costs will also be an issue and of course, any modification needs to ensure watertightness of that cabin. Accordingly, there are a number of competing tensions to achieve an appropriate outcome.
- [61]. Again an inquest is raising the issue of whether fishermen should wear an inflatable style PFD life vest with a PLB attached. Again, I am another coroner who has called for this. I appreciate it has been trialled previously and there has been studies carried out in relation to it, but what an inflatable PFD means is that a PLB can be located on the person. In the instance of the *Dianne* we know the skipper was at the helm working, and if wearing an inflatable PFD with PLB when the roll-over had occurred he would have simply reached for his PLB and activated it. I realise that PLBs are not as powerful as an EPIRB but if any emergency distress signal was received by AMSA in Canberra SAR operation, or at the very minimum, enquiries would have commenced. They were just 5 nautical miles from shore at a location with a VMR base nearby.
- [62]. The circumstances of the *Dianne's* roll-over and the evidence of Mr McDornan shows is that even though this was a very safety conscious crew which had Grab Bags and EPIRBs located at various locations on the vessel (they did not have just one, as most vessels do) it is the nature of a violent capsize that people sometimes cannot get to an EPIRB, so accordingly, the EPIRB needs to be with them. Of course, EPIRBs are bulky and that is why a PLB is a worthwhile option but of course does not replace an EPIRB. The wearing of an inflatable PFD also means that if a crew member goes overboard whilst working they have their own PLB with them ready to be activated (and fishermen have been known to go overboard without being noticed by other crew).
- [63]. Modern inflatable PFDs are also now of a design where they should not overly impede work being undertaken. Whilst all vessels are 'workplaces' and PFD's should be worn whilst conducting such work, it appears there is a culture against their routine use. That needs to change.

Old Sandy Straits and use of Quad Gear

- [64]. In respect of the *Cassandra* there was an issue of whether quad gear should be reviewed in the Sandy Straits region. That is certainly worthwhile and I recommend that the authorities engage with the experienced operators to review what is appropriate gear to use in the area due to the significant uncharted pinnacles or reefs in that location on what is otherwise a sandy bottom. Mr Ehrke said that he knew of a general area where you would work, and the limits to those areas. It appears on the night that the *Cassandra* rolled over it was operating just south of the acceptable working area. There should also be communication amongst the industry operators of what are inappropriate areas to be worked so new skippers who may move to the area receive what may be called “local knowledge”.
- [65]. The question of whether trawl nets should have a quick release mechanism⁶¹ or a drag function is something that needs to be considered and monitored to see if it should be implemented. There are a number of studies being conducted into the existing drag systems, sacrificial linkages, etc and AMSA continues to monitor these developments. This is an area for industry and Government authorities to further research, then sit down and work out the best way forward. Authorities will be well aware that the experienced and practical fishermen will be important to listen to, whilst of course remaining cautious as to issues of self-interest. Accordingly this is only an Observation, rather than a Recommendation of the inquest.

Grandfathering of Vessels and Original construction plans

- [66]. “Grandfathering’ is a term used for something previously compliant with laws now being non-compliant with updated laws, but it is still allowed to operate, essentially under the old laws then applicable to it.
- [67]. I have not received sufficient information to make any final determination on which direction authorities should go in terms of the grandfathering of vessels as I remain very conscious that vessels have a long period of use. Perhaps the best way forward is for the vessels without original surveyed construction plans to undergo a stability test, or at least an assessment by an appropriate naval architecture or marine surveyor at the time of any sale of that vessel. At the very minimum I would hope that each vessel have its’ own plans and configurations when first launched so that the skipper and crew operating that vessel knows immediately what modifications have been made to it. That may be of assistance in how they use the vessel including conditions they feel comfortable operating in. As one naval architect commented on the *Cassandra*, as soon as he saw the original specifications for the vessel, he could see that its’ stability would very likely have been affected by the later

⁶¹ If trawl winches cannot have a quick release hook then perhaps the answer is as crude as an axe kept in close proximity of the lines so that the line can be cut quickly.

twin boom modifications and this would have made them more cautious in their use of that vessel.

- [68]. Skippers need to have access to this information and accordingly a copy needs to be placed on the vessel so that Skipper and crew can readily view it, and a copy needs to be securely held by the owner of the vessel and the relevant government authority, so it can be referred to if the vessel is lost at sea. No doubt there will be some consultation with industry representatives as to how best to implement any changes in grandfathering of vessels. I appreciate that some vessels will be over 40 years old and accessing original documents may be problematic which is why those older vessels may have to be subject to an assessment by a qualified marine surveyor.

Vessel Monitoring System

- [69]. As I said earlier the most concerning issue to me is the to-date inactions and what I perceive as persistent reluctance by DAF to implement the failure to poll alerts to SAR authorities. Consequently I am not confident there will be meaningful change by DAF in implementing the VMS safety function which is already demonstrated can be done in the UK and Western Australia. I cannot find any valid reason why it cannot be implemented, and accordingly I Recommend (as have coroners before me) that the Department of Agriculture & Fisheries implement real-time monitoring of the VMS tracking or 'failure to poll' function of the system to allow the QPS to be immediately notified⁶² of any failure to poll by a vessel. It is the QPS who have the manpower and systems to commence actions upon receiving a 'failure to poll' alert. They already co-ordinate search and rescues so are the appropriate authority to do this. They gave evidence at the inquest that it can be readily implemented by them. The mechanism of their receiving 'real-time' alerts from the DAF VMS monitoring system seemed very simple⁶³ and quickly implemented (I could hardly see there being any cost). I cannot understand any reason why DAF would not implement it, and at the inquest they belatedly conceded they would and could. Their being dogmatic against this position leading up to the inquest and even in the evidence from their witness leaves me baffled as to why they took such an obstructionist position. All I can say is that pleasingly for the industry that the Department's position has now changed.
- [70]. Action on this is now firmly at the feet of DAF⁶⁴. I will watch with great interest, no doubt also will the fishing industry, to see what action is taken and implemented. Surely there will not need to be a bureaucratic 'consultation period' which does nothing to result in meaningful change and protection to those then working at sea.

⁶² Email or SMS alert, it is simply an electronic function and hardly involves any additional work by DAF officers

⁶³ It is just an addition text and email sent automatically by the system, it already does this for DAF.

⁶⁴ And it may be that they have been proactive and already implemented the 'failure to poll' notification to QPS, we shall see.

[71]. Why I raise this specifically is because at the Inquest DAF proposed a draft⁶⁵ Recommendation on this point which would only seek that it be ‘explored’. I make clear there will not be any mere ‘exploring’ of the issue by the Department, rather it will be implemented as it has in other jurisdictions. Our fishing industry requires no less.

Summary of Recommendations

[72]. Accordingly the inquest Recommendations are as follows:-

- a. That the industry be encouraged to place an emergency Grab Bag of necessary basic equipment to assist crew to exit a capsized vessel, and that Grab Bags be located in the sleeping cabin and near the helm;
- b. That self-illuminating LED strip-lighting and Emergency Exit signs be encouraged to be installed in existing vessels within two years, and after two years the authorities consider it being mandated in all commercial fishing vessels;
- c. That industry be encouraged to secure, by restraining straps or being bolted down, all bulky items in a wheelhouse to ensure those items cannot move in a capsizing event;
- d. That fishermen be encouraged to wear an inflatable style PFD vest whilst working on the decks of a vessel or whilst at the helm and that these PFDs have a PLB;
- e. That regulatory authorities and industry investigate appropriate, workable, solutions to ensure doors on vessels are able to be opened against water pressure, whilst ensuring doors still retain their designed purposes;
- f. That regulatory authorities and industry review the use of quad gear in the Sandy Straits area for trawling;
- g. That regulatory authorities and industry investigate and proceed towards ensuring all vessels have in their SMS a copy of the original plans of the vessel, details of all modifications which had been carried out, and any stability test documentation, and that a duplicate copy of these documents be kept by the vessel owner in a secure place on land, and a copy also retained by regulatory authorities. Regulatory authorities may also consider making mandatory at the time of sale, a

⁶⁵ The draft Recommendation put forward by DAF provided: “*The Department of Agriculture and Fisheries explore any lawful means of automatically providing data, namely a failure to poll alert fifteen minutes after the first failure to poll event, from the Vessel Monitoring System to the Queensland Police Service, within the boundaries of the technical capabilities of the VMS*” (my underlining added). Incidentally if ‘lawful’ is a potential hindrance due to some nebulous privacy concerns I am sure every fisherman at sea in distress would happily allow their ‘failure to poll’ data to be shared with any rescue service, that is the proverbial ‘no-brainer’ in my humble opinion.

report on the stability test report for vessels then without a current stability test report (if the vessel was changed from its original configuration when launched);

- h. The SMS should also include safe methods for retrieving a snagged net from a hook-up by use of a snatch block or leaving the net for later retrieval;
- i. That the Department of Agriculture & Fisheries immediately implement the sharing of the 'failure to poll' function of the VMS system to allow the QPS to be immediately notified by text (SMS) and email of any failure to poll by a vessel.

Coroners Act s. 48: 'Reporting Offences or Misconduct'

[73]. The Coroners Act section 48 imposes an obligation to report offences or misconduct.

[74]. It was not suggested, nor recommended, to me by any party at the inquest that any further person or entity should be referred for investigation of an indictable or other offence. Accordingly I make no such referrals under section 48.

Magistrate O'Connell
Central Coroner
Gladstone
29 August 2019