THE P&O FERRY THE PRIDE OF BILBAO

THE YACHT OUZO

ANATOMY OF A TRIAL FOR MANSLAUGHTER AT SEA

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LEADING COUNSEL FOR THE DEFENCE IN THE PROSECUTION OF THE OFFICER OF THE WATCH

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INTRODUCTION

It is some eight years since the tragic death at sea of three experienced yachtsmen. It was said that their yacht the *"Ouzo"* which was making her way from Bembridge on the Isle of Wight to Dartmouth, at night and in a moderate sea, was struck or swamped by the 37,000 tonne *Pride of Bilbao* and sunk. The yachtsmen were wearing life jackets albeit in at least one case the crotch strap was not properly fitted.

All three drowned. There was evidence of hypothermia. No distress flares were sighted. No mayday call was made. The incident was rapid and catastrophic. It must have been a collision or capsize following close contact with another vessel or object. There were no serious traumatic injuries or damage to outer clothing so that, as one expert in marine medicine concluded, the yacht could not have been involved in a direct impact with a ship at speed. Thus the yacht must have been capsized and been sunk either by sustaining a glancing blow from a ship or by a wave from the wash of a ship. Sudden capsize with the occupants scrambling or being washed into the water was a likely explanation for their drowning. The bodies were not found until 22nd and 23rd August. The wreck of the yacht has never been found.

If the *Ouzo* was sunk by another larger vessel it was but one of a number of such accidents in recent years. Thus on 5th August 2010 the ferry *Scottish Viking* was in collision with a fishing vessel *Homeland* off St Abb's Head. The *Homeland* sank and a member of the crew was lost. In July 2006 *Tuila* a 28 foot Twister was lost with all four crew in the North Sea. It was considered that she had been struck by a merchant vessel. On 11th February 2011 the container ship *MV Boxford* collided with the fishing vessel *Admiral Blake* south of Start Point. The *Admiral Blake* was damaged and two crew thrown overboard but were rescued. *Boxford's* bridge was unaware of the presence of the *Admiral Blake* until shortly before the collision. Neither visual nor radar lookout was fully effective. On 6th August 2011 during Cowes week the yacht *Atlanta* was in collision with the tanker *Hanne Knutsen* off Cowes. Two of the crew were thrown overboard but were quickly rescued. See also the collision of the LPG carrier *Gas Monarch* with a yacht, the *Whispa* off Lowestoft in poor visibility and a later collision between the bulk carrier *Alam Pintar* and the fishing vessel *Etoile des Ondes* in the English Channel off Cherbourg with the loss of the *Etoile* and one crew.

My intention in this paper is to describe what was involved in the trial of the officer of the watch Michael Hubble. Any technical or other errors are entirely mine.

THE VESSELS

The *Ouzo* was a 26ft Sailfish, a sloop rigged sailing boat with a lifting keel built by Maxi Marine of Hamble. Her previous owner wrote that in a Force 4 she would carry her full sails comfortably and when beating would manage as much as 30 degrees of wind. She was very stable and had a buoyant hull. He thought that in the unlikely event of her being knocked over, there was the possibility of the keel lifting thus making the boat less stable but that was highly unlikely. She was equipped with navigation lights on the push and pull pits with an independent light at the mast head and a streaming light. She had an aluminium octahedral radar reflector which could be hoisted up into the rigging. She had sailed in a Force 7 and 8.

The *Pride of Bilbao* (renamed *"Bilbao"* in 2010 and then the "*Princess Anastasia")* is a 37,000 tonne ro passenger ferry built in 1986 in Finland. She is 177 metres long overall with a beam of 28.4 metres. The bridge is set 20 metres back from the bow. It is 32 metres above the waterline. She is ice strengthened Class 1A. It was assumed that she had a pronounced bow wave by reason of her bulbous bow. In fact she did not. She had been constructed for the Swedish Archipelago and thus designed to create as little wash as possible.

THE PROSECUTION

The accident resulted in the officer of the watch and first mate Michael Hubble being prosecuted for manslaughter and under the Merchant Shipping Act 1995.The allegation was not so much that he had been negligent in the control of the ship prior to the collision or close quarter passing, rather that he, as the officer in charge had failed to turn her round and ensure that the three men were safe before proceeding.

That sort of allegation, the abandonment of fellow seafarers, is perhaps one of the most distressing complaints that could be made against a seaman. One national newspaper cruelly headlined the prosecution by describing how the officer "*left (the yachtsmen) to die".*

The jury acquitted Mr Hubble of manslaughter. They were unable to agree on a verdict in respect of a count alleging a breach of Section 58 of the Merchant Shipping Act 1995 in that he had *"failed properly to discharge his duties or to perform any other function in relation to the operation of his ship or its machinery or equipment to such an extent as to cause or to be likely to cause the death of or serious injury to (the deceased yachtsmen)".* The Crown offered no further evidence and a "Not Guilty" verdict was recorded on that count.

EXPERTISE INVOLVED IN THE TRIAL

The trial was a most complex marine trial involving renowned experts in virtually every area of marine expertise- master mariners, experts in ship design, in seamanship, hydrodynamics, radar, tides, body drift, SARIS, yacht design, paint analysis, analysis of VR3000 bridge data recording equipment, radar reflectivity, mobile phone ranges, meteorology, environmental medicine, applied physiology and marine survival and ships dynamics. It involved an analysis of the COLREGS, Fleet

Regulations, Marine Guidance Notes , International Convention for the Safety of Life at Sea as well as the primary legislation. There was voice analysis evidence in relation to the bridge voice recording so that what had been said on the bridge at about the time of the presumed collision might properly be interpreted.

Counsel and experts accompanied the ship on her trip to Bilbao. The Defence had the assistance of a marine expert Captain Stephen Healy of Compass Maritime Limited. He collated the evidence as it developed during the trial and was available to assist 24 hours a day.

A Spanish tug was used in Bilbao to position itself so that visibility from the bridge might be calculated. The resultant evidence proved crucial to the outcome of the trial.

NOISE ON BOARD THE SHIP

The trial involved the analysis of every possible noise which might have alerted the watch to a collision and the examination of the entire ship from engine room to car deck to see just how many mysterious noises might be heard from the bowels of the *Pride of Bilbao*. 1153 questionnaires had been sent out to passengers. 691 replies were received. 636 made no mention of noise. 32 positively stated that they had heard no noise. 23 reported hearing noises. No reports of noise were received from crew members. Passengers described hearing *"a big thump"* and shuddering at about the time when the collision might have taken place, or a noise very low in the ship, a noise from the engine area like a skip being dropped off by a lorry, a bang, a *"shudder and a loud crashing noise", "bangs and judders"* as if as a result of a collision, a *"crunch (as if) like fibre glass being crunched",* a *"scraping noise",* a *"thud",* a sound like the *"Titanic hitting an iceberg".* Some passengers were convinced that there had been a collision. The Master Mariner Captain Stephen Healy undertook a detailed search of the lower accommodation, car decks and engine room areas specifically to look for potential sources of the types of noise reported. Doors, containers and fittings made some noise but not the sort of noise described by some. There had been no report of damage to vehicles. Regular senior officers spoke of the heavy metallic noise described by some passengers as possibly resulting from the moveable car decks which sometimes flex and click back into line when at sea, the flexing of a ships structure in a sea way being natural. Whether they were noises from waves, car deck or the noises which have no detectable cause apart from the ship's structure, we would never know. What was plain is that they could not be noises of a small yacht colliding sideways on with a ship the size of the *Pride of Bilbao*. Such would have been no more than a relatively light scraping sound which would not have been heard several decks higher on the opposite side of the ship as described by some.

PAINT SCRAPINGS

Paint analysis was essentially negative. The side of the ship was examined for relevant damage. There was none.

DEFENCE TEAM AND LEGAL AID

I was defending the officer of the watch leading Oliver Saxby QC before he took Silk. The Instructing Solicitors were BKRW of Kent now sadly demised. The principal Solicitor was Chris Wray now of Bond Joseph of Canterbury who with his colleague Kerry King represented Mr Hubble.

It was an expensive trial. The officer described by his captain as *"excellent"* was legally aided. The taxpayer funded his defence. That funding is a tribute to the value \\ we then placed on justice for the individual. Every aspect of the Crown's case was tested and much was ultimately found to be wanting. The outcome of the trial is a tribute to the jury system which imposes on a jury the burden of judging a case and bringing in a true verdict according to the evidence, free of emotion and prejudice.

To the side of the jury box was a scale model of the *Pride of Bilbao*. Just beside it was a scale model of the yacht. How easy it was for the jury to be reminded, day after day in this long trial, of the disparity in size between the two vessels and of just how unequal they were in the event of a collision.

So also without effective legal aid, the officer of the watch would have been just as unequal in his prosecution by the might of the state.

NARRATIVE

The *Pride of Bilbao* left port shortly after 2300 hrs on Sunday 20th August 2006. She had any number of watch keepers. Portsmouth is a busy sea area. I recall a comment that to sail in this area at night is like flying a Cessna over Heathrow at rush hour. The radar screen dumps showed just how busy this area of sea is.

The *Ouzo* should have left Bembridge in the afternoon but the crew missed the tide; they could not get out of harbour. By 1730 hrs they were preparing to launch. The crew intended leaving Bembridge at about 1930 hrs. The Bembridge radar showed a target leaving the harbour at about 2030 clearing Bembridge approach channel then altering course south south east in the direction of Bembridge Ledge Buoy where it altered course to the south south west and was lost to radar due to the shadow created by Foreland Point. At 2054 the target was in close proximity to an inbound target coming from the north and heading towards Bembridge harbour. The outbound target continued to clear St Helens Fort where it changed towards Bembridge Ledge.

Wind conditions were breezy or fresh with moderate seas. One maritime expert described the conditions as *"probably not ideal for fair weather summer sailing but not exceptional for the Channel even in August".* An analysis of the wind and weather conditions at trial suggested that it was at the top end of Force 4 probably 5.

The Senior Master of the *Pride of Bilbao* was the excellent Captain Alastair McFadyen, a man of enormous marine experience. The officer of the watch or second mate was Michael Hubble.

For those who do not know what a bridge is like at night I am reminded of the reaction of the jury when they visited the ship. The bridge is profoundly dark with dimmed control lights. Their surprise was palpable as the lights went off. It is so dark that when someone returns to the bridge he has to be guided by torch light to his position. There was to be much discussion following this incident of the time that it takes for crew returning to the bridge to accustom his eyes to the *"complete darkness"* as one watch keeper described it so that he can properly undertake his watch keeping duties. There was a degree of light pollution on the bridge from the chart room as pointed out by MAIB.

The jury did not travel with the ship to Bilbao. I, Kerry King and Captain Healy did. As the ship went out to sea it became clear just how dangerous it is to sail in those waters at night. *Pride of Bilbao* is huge. A yacht is small. As we left port those on watch took inordinate care to watch for small vessels some of which, as they approached had no or obscured lights.

The ship left the berth at Portsmouth with Captain McFadyen at the helm. The helmsman took over and she was driven out of Portsmouth along the Portsmouth approach channel. On the bridge were the Captain, the chief officer and the helmsman with lookouts on the foc'sle. The ship passed Blockhouse and then Outer Spit Buoy. At about midnight in the vicinity of the Forts, Mr Hubble took over. Two lookouts arrived, one of whom relieved the helmsman and just past Nab Tower the *Pride of Bilbao* approached full power at between 17 and 19 knots.

By 2302 one of the crew of the *Ouzo* had used his mobile to phone home. The crew were doing three hour watches. He described conditions as very calm.

At 0030 the ship went to automatic. Night orders had been written. The Orders were to maintain four engines throughout, keeping at full speed, fins throughout. The fins are the stabilising devices which lie some four metres from the surface and 3 metres from the ship's side. The Captain made it clear in the Orders that in the case of doubt he must be called. Safety distance between ships was set at two miles ahead and one mile astern. Mr Hubble was in control. The watch scanned the horizon whilst looking at the radar. As vessels appeared on the radar the curser was moved to record speed, direction, course and distance from the ship. The port radar was set at 12 miles, the central radar at five miles. Speed was about 20 knots. Visibility was quite good. The course changed gradually as the ship positioned herself to head towards Spain.

The black box showed that at 01:14:00 automatic clutter control was changed from automatic to manual, showing noise (return from waves) out by approximately one mile.

Radar works on the principle that the ship sends out radio waves which if they hit an object are reflected and show up on the radar screen. The bigger the object, the bigger the image. The radar can be adjusted to make it more or less sensitive. This can be problematic as at sea, waves give a radar reflection which causes other small objects to be lost in the clutter by the waves shown on the screen. If you manually suppress the clutter too low you run the risk of losing small objects from the screen completely. The autoclutter selects its own levels depending on the amount of clutter it detects.

The Captain's experience was that it was not rare for sailing boats to be sailing at night without lights and for a yacht to be invisible to both radar and the naked eye.

DISTANCES

One of the issues the jury had to decide was the position of the yacht as she approached the *Pride of Bilbao*.

A watch keeper called that it was "*showing a red light to 1 point head on, pretty close, a yacht just there, with clearing, no red light*". If that was right the Captain should have been called. The

emergency procedures would have been followed which involved the ship turning round, man overboard procedures followed, life buoys being released and the coastguard informed.

The autopilot turn radius was set at 1.5 miles but there is an override facility which can be used to change course quickly. The Captain would have used the auto pilot emergency override and then, using the tiller would have put the helm and thus rudders hard a port with a maximum rudder angle of 38 degrees and a few seconds later when the vessel was on the starboard shoulder (where the bow starts to curve from the side of the ship) he would have used the same tiller to apply full starboard helm There was nothing else you could do apart from stabilise the ship once the vessel was clear.

During the interview with the investigators, the officer of the watch Mr Hubble spoke of travelling at a speed of 21 knots, seeing a small vessel just off the starboard bow at half a cables length from the bridge and putting the ship 5 degrees to port for 9 seconds and then 10 degrees to starboard for 2.5 seconds to avoid the vessel. This said the Captain would have been an unusual manoeuvre which he had never undertaken.

In fact whilst in Bilbao we were able to demonstrate that the estimate of the yacht being so close was wrong. The officer would not have been able to see from the bridge a vessel at half a cable's length from the bridge.

When in Bilbao we were able to use a Spanish pilot boat to position itself as directed from the bridge of the *Pride of Bilbao*. The boat started off the starboard bow and moved down the ship to the stern. We were able to demonstrate that if one comes out of the chart room and stands as the officer would have been standing and as he described, any light seen must have been considerably more than two cables away. Thus the passing distance must have been much greater than at first thought.

The P&O Ferries Limited Marine and Safety Manager, a Master Mariner, provided important evidence. He was able to take the various positions of the crew at the time of the initial sighting of the yacht. He calculated the minimum distances at which a target could be seen from each of the positions. He took the distances from the bridge windows to the position envisaged and from various points to starboard calculating the observer's height and the height of the bridge above sea level and the height of the bridge front window sill.

Looking directly ahead, the minimum distance at which the target could be seen was 125 metres; at 3.5 points to starboard it was 145 metres; from the side of the ship it was 141 metres.

The black box data showed that the steering was set at automatic pilot between 00:02:10 to 00:17:00; at 00:02:40 the ship made an alteration to starboard to bring to a new course; at 00:05:50 she was steady on a new course of 242 degrees; at 01:03:42 she was slightly to north of her intended track; at no point was there any large target on the radar close to the Pride of Bilbao; at 01:08:36 she was turning to starboard and at 01:11:40 she turned 5 degrees to port to start bring her back onto the intended track.

The MAIB investigation which followed the tragedy hypothesised that the crew of the *Ouzo* was likely to have seen the *Pride of Bilbao*. Visibility was good, the night was dark, the ferry would have been brightly lit and she was approaching from a direction so that she would not have been

obscured by the sails. As the ferry approached it would have appeared that she was going to pass well clear of the *Ouzo*. In fact until 0101 she was steering a course to pass the yacht at a distance of 0.5 NM. On reaching the waypoint position at 0101 she began a slow turn to starboard. The yacht's crew, if they had seen this might have thought that she was altering course to give way in compliance with Rule 18 of the Collision Regulations. The alteration of course took more than three minutes to undertake by reason of the small alterations which the officer had ordered to avoid heeling. The time taken from when the ferry settled on her new course to the time of collision or close quarters would have been less than four minutes.

I recall it being said that from the point of view of the yacht, when the crew first saw the *Pride of Bilbao* she would have been starboard side on and looking as if she was heading away. She then turned to starboard to head to Spain and would have been upon the yacht within minutes.

THE PROSECUTION EVIDENCE

The chief examiner of the RYA knew the Sailfish 25 well. He sought to plot the likely position of the *Ouzo* at 0107 on 21st August taking into account the last known position at 2212 on 20th August. The technical department of the RYA assisted with the hull, rig structure and stability of the vessel and the RYA meteorologist assisted with the marine weather assessment for the yacht. Taking into account wind, tide, sea state, strength and ability of the crew, type of boat, probable sail plan and the probable effect of the land on wind direction he sought to establish the probable position of the yacht at 0112hrs. The variables were wind direction, tacking angle, amount of leeway and effect of tidal stream.

The Marine and Coastguard Agency collated all the geographical information relating to the incident and in particular the *Pride of Bilbao's* passage plan showing waypoints and course lines, log book entries, data recorder (VDR), the Southampton Vessel Traffic System which showed what must have been the *Ouzo* leaving Bembridge at 2115 on 20th August until she was apparently lost to radar at about 2212, position where the bodies were found, SARIS data and mobile telephone information.

From that information an expert was able to position the mobile call made at 2259hrs by way of arcs showing possible positions at 2300 based on a variety of average speeds over the ground. In order to ensure that the radar target must have been the *Ouzo* a similar yacht was taken out and tracked.

The position of the *Pride of Bilbao* was established from the VDR.

The Crown thus sought to establish that at the crucial time both vessels were in exactly the same area of collision.

It was then necessary to seek to establish where the *Ouzo* must have been when seen by witnesses at various positions from the bridge of the *Pride of Bilbao*. That was done by getting the witnesses to point to where the yacht was and then positioning a police boat at that point so that measurements might be taken.

Those calculations purported to establish that the yacht must have been some 14 metres from the straight side of the ship.

The nautical surveyor employed by the MCA then opined on the effect the ship might have on a yacht in that position. The general principle is that a high pressure area is found around the bow of a moving vessel which tends to push away vessels or floating objects which enter that area. Then as one moves down the side of the moving vessel the pressure area changes into a suction area which tends to pull other vessels towards the moving vessel. This evidence of principle was developed as will be seen hereafter.

CONVERSATIONS ON THE BRIDGE

Important evidence was the conversations on the bridge of the *Pride of Bilbao* as recorded by the black box. Thus at 01:07:24 the lookout reports a red light *"He's showing a red that one..pretty close..head on head on ..pretty close..a yacht..just right there".* The ferry alters course to port at 01:07:52 and Mr Hubble says *"we are clearing".* At 01:07:509 the ferry alters to starboard. At 01:08:45 the lookout says *"see a light?"*At 01:08:51 Mr Hubble says *"No no you can't, you can't see it can you (or) I can't see it can you".* The watch says *"no"* and at 01:09:26 *"Ah there's a light there..can't believe he came up that quick, fuck all on radar".*

This was to prove important evidence of judgment on the assumption that it was indeed the *Ouzo* which had come into close proximity with the ferry. It was argued by the defence that far from being reckless as to the safety of the crew of the yacht the officer of the watch had established that it was safe before continuing at 01:10:24 to alter course to resume track.

At about 0200hrs when Mr Hubble left the bridge and handed over the watch, he mentioned that the ship had come very close to a yacht which had come down the starboard side and he had swung the Bilbao's stern round to port. He was relaxed. He believed that nothing untoward had occurred.

POLICE BOW WAVE FILM AND PROSECUTION WAVE EVIDENCE

An interesting piece of evidence was a video taken by the Police of the bow wave and wash of the *Pride of Bilbao*. This evidence proved to be of little use once the technical aspects of the ship were analysed by the experts called by the Defence.

The Prosecution expert said that the relative speed of the two vessels was in the region of 15 to 16 knots, the *Pride of Bilbao* travelling at 20 knots, the yacht 4 to 5 knots.

The literature deals with interaction of ships in close proximity at low speed e.g. tugs and tankers. There was no public information covering this case. Thus the expert performed a series of model tests in the Austin Lamont towing tank at the University of Southampton. He used models which in his view replicated as far as possible the two vessels. The yacht model he said rode over the waves with fairly violent motion. The bow wave he said was four metres above sea level. The bow Kelvin wave system was obviously a deep sea formation. The stern Kelvin wave system was two metres crest to trough of the wave with a steep wave.

Thus he opined, if the yacht was 20 metres from the side of the ferry at the bridge, 25m aft of the bulbous bow, as the yacht moved aft, it would have been affected by the bow wave system, an area of high amplitude wave motion and relatively short wave length. If she survived the wave wash then as the stern system was encountered with the yacht having violent motions caused by the bow

waves, she would then have to ride over a stern wave system of steep waves. At the bow she may have taken on board large amounts of water thus affecting stability and may have been swamped by the stern waves. That was the theory.

The expert acknowledged the problems inherent in his experiments. The question of scale *Pride of Bilbao* to the *Ouzo* meant that the scaled model of the *Ouzo* used in the tank was very small (even though the relative sizes of the two models were not correct) and matters such as surface tension might impact on the experiment; the model ship he used to replicate the *Pride of Bilbao* did not have the bulbous bow of the ferry which would have a different wave system. It was not possible to take into account weather driven waves which would have a serious effect on the ship wave wash depending on the size of the sea state.

These difficulties emerged following consideration by the Defence of the Crown's expert's report which used the Pierson Moskowitz sea spectrum (Bretschneider one parameter spectrum) used for open ocean situations as opposed to the spectrum JONSWAP which would be used in the Channel. Having considered the predominant wave direction at the time, the Crown's expert was forced to concede that this wave spectrum was the correct choice.

All he could then say was that his experiments were indicative of what might have happened in very close quarters.

PROSECUTION EVIDENCE ON HYDRODYNAMICS AND CONCLUSIONS

The evidence relating to the hydrodynamic interaction of the two vessels was problematic. It was dealt with as a matter of principle using MGN 199(M) "Dangers of Interaction" and evidence provided by the MCA Head of Seafarers Training and Certification Branch. The problem with this approach was that the interaction effect depends very much on the depth of water and types of vessel involved. This was particularly important in relation to the *Pride of Bilbao* as will become clear hereafter.

The expert Master Mariner called by the Crown considered what the officer of the watch should have done on the basis that the stern light of the yacht was first seen one to two points to starboard closely followed by the port side light as the *Pride of Bilbao* closed on the yacht. After the yacht passed abaft the beam no light was seen for some time. Then a single red light was seen assumed to be the yacht's side light. The expert opined that the dog leg manoeuvre carried out by the officer of the watch was, albeit not unreasonable, of little effect but more action should have been taken to confirm that the light seen was from the same vessel that he had taken action to avoid.

DEFENCE AND THE CRESCENT BEAUNE

As the evidence developed and the position of the *Ouzo* at the point of presumed collision was less certain than had been thought, so the Defence was able to submit that the *Pride of Bilbao* may not have been the offending vessel; rather it may have been a tanker called the *Crescent Beaune*, whose Master was later to admit that he had stood his watch down at the time of the collision.

During the investigative process in September 2006 the Master had told Police that the crew consisted of himself, a chief mate and three able seamen, a chief engineer a second engineer and a cook.

The *Crescent Beaune* left Dover at 1500 hrs on 20th August on the way to Portland. There was a four hour rota and the captain took it in turns with the chief mate and second mate to control the ship. He said *"The three able seamen also take it in four hour turns to act as look out".* The ship does not have a black box recorder. She does have two Sperry Rooker Systems and an ECD15 electronic chart system. He identified the lookout for the period 0100 and 0400.

In fact he had stood his lookouts down and was to tell the Court that he was not able to say whether the *Crescent Beaune* had been in collision with the *Ouzo*.

There was the possibility that the *Ouzo's* rigging had been caught in the superstructure of the *Crescent Beaune*.

It is plain from the Southampton VTS that at 01:03:55 she was 2.5 nautical miles astern of the *Pride of Bilbao*. The chart display system of the *Crescent Beaune* was viewed for the period 01:10:14 to 02:00:30. In order for radar targets to be displayed on the system the officer of the watch must manually select the target as he wishes. The radar disclosed nothing significant. There was no unusual course alteration.

DEFENCE APPROACH TO THE CASE

The Defence approach to the case was that every piece of evidence must be examined. Nothing could be accepted as accurate. As it happened we were right to do so.

SIMULATION TRIALS FOR BODY DRIFT COMPARED WITH SARIS

The Marine Simulation Department of South Tyneside College undertook real time simulation trials using the Kongsberg Ship Bridge Simulator to ascertain whether there was any correlation between the position of the *Pride of Bilbao* and the *Ouzo* at 0107 on 21st August.

The real time simulation was more accurate than SARIS (Search and Rescue Information System) which has been in use since 1998 and is a sophisticated maritime search planning tool. In this case SARIS was used to track the probable drift of the bodies performing a reverse exercise from the primary purpose of SARIS. The SARIS operator took historical wind information, leeway speed value, wind driven current with fix and drift error. For both bodies the calculated back track positions were well within the error radius. It was concluded using SARIS that the bodies and Pride of Bilbao could be considered to be in very close proximity to one another when the bodies went into the water.

The simulator uses dynamic raw data including tidal values and surface driven currents and hourly changing wind values.

The Marine Simulation Centre included a six bridge ship simulation suite with integrated VTS, two Kongsberg Maritime Simulation Systems and Polaris Full Mission Bridge simulator. The real environment included modelling software which creates a mathematical model of any floating object and needs inputs for hydrostatics and hydrodynamics to enable movement.

The mathematical model of the bodies in the state found and with exact replication of the state of the life jackets was produced. Wind information was taken from Coastguard recorded information, in this case the MRCC Solent meteorological observation log, taking into account the fact that wind encountered at MRCC Solent is affected by the mainland and the island itself and can be significantly different to that experienced out in the open sea to the south of the island. Information on tidal flow was taken from British Admiralty charted information found on charts and tidal stream atlases. Waves were taken from Coastguard information.

The team considered the Portsmouth tidal information but recognised tidal information from the Hydrographic Office was crucial, the bodies being under the influence of Tidal Diamond F.

All systems were completed in real time with results recorded on the Polaris playback system.

The exercise was able to assist in relation to the question whether the bodies went into the water at the same time.

The simulation was performed by a Master Mariner and expert in nautical studies. Advice was given by a survival expert who could speak of movement of bodies in water and life jackets.

The simulator was programmed with a body in a life jacket as an *"ownership".*

The bodies were assigned individually to a ship bridge, environmental factors were set and the exercise left in real time to drift the ownership body. Environmental factors were varied as time progressed. The Polaris playbacks recorded hourly positions real time for the period 1829 23rd August to 0107 on 21st August

The conclusion of the exercise was that the bodies were much further east than the position of the presumed incident with the Pride of Bilbao at 0107.

The experts concluded that *"there was no real correlation between the position of the* Pride of Bilbao *and the probable position of the* Ouzo *at 0107 on 21st August 2006" and "it is possible that another vessel may have collided with the* Ouzo *or had a close quarter situation"*

RADAR DUMPS

The Marine Simulation Department at South Tyneside analysed the Southampton radar dumps. They were able to track the *Ouzo* from 2107 BST leaving Bembridge just east of St Helens Fort slowing possibly to hoist sail. The ground speed of 4.7 knots was detected as she made towards the Bembridge Ledge buoy at 21:13:37 and then at 21:20:20. She ended up east of the buoy at 2130 just as the ferry Bretagne passed her at 140 metres at 13 knots. By 21:38:01 she is passing east of the West Princess buoy. She is last recorded on radar at 2245 although there are possible images at 0104 and 0110. A speed of 2.5 knots was calculated based on time and distance. The radar evidence suggested that if *Ouzo* had sailed on an expected heading from the Bembridge Ledge buoy, she would have ground tracked to the west. She would have been at 0107 in an estimated position well to north east of the *Pride of Bilbao's* position. If the 0104 and 0110 radar returns are of the *Ouzo* then she is close to the *Crescent Beaune* and the same position is close to where the simulator placed the yachtsmen at 0107.

When on the return trip, *Pride of Bilbao* heard of the accident on the VHF emergency channel and all ships were told to look for debris, the thought in some minds was that the yacht had been run down by a container ship. That thought proved to be prophetic if one strand of the *Pride of Bilbao's* defence was correct and the *Crescent Beaune* did collide or may have collided with the *Ouzo*.

DEFENCE HYDRODYNAMICS

Burness Corlett Three Quays (IOM) Limited were instructed to consider the pattern of waves likely to have been generated by *Pride of Bilbao*, the way that pattern would have been affected by the wind driven sea state at the time of the presumed encounter and the variation in the size and severity of the waves with distance off the ship; the stability of the *Ouzo*; the general magnitude of the interaction forces which would have acted on the *Ouzo* had she passed down the side of the *Pride of Bilbao*; whether they would have tended to suck her inwards or push her away and the way in which those forces would have varied with distance off; the likely effect of the wind driven sea state and the combined sea state including the waves from the *Pride of Bilbao* on the motions of the *Ouzo* and their variation with distance off; an assessment of the risk of swamping and sinking of the *Ouzo* during and after a passing manoeuvre by the *Pride of Bilbao* taking into account the *Ouzo's* flooded stability and variation in the possible passing separation.

The distances were set at 25, 50 and 75 metres.

The experts used a hydrodynamics software called BASIN (Boundary Element Analysis for Sea Keeping Investigation) which investigates wave train and interaction forces and motions of ships in waves, essentially the analysis of hydrodynamic problems with particular emphasis on the prediction of ship motion and loads and naval architecture software HYDAS which is used to investigate intact and flooded stability of ships.

They were able to use hull definitions for the *Pride of Bilbao* and photographs of sister vessels of the Ouzo. A naval architect was able to inspect another sister vessel and take measurements of her hull, deck and cockpit.

They used all relevant environmental data, data from the ship and a stability analysis for the *Pride of Bilbao* which had already been carried out using software called NAPA. The hull definition from NAPA was imported into a graphical processing package called RHINO which was used to produce the hull definition for hydrodynamic simulations in BASIN.

The simulation showed that the stern wave system of the *Pride of Bilbao* was much stronger than the bow wave and that the bow wave diminished quite quickly with distance off so that by 50 metres the bow wave is quite small and the trough wave astern of it has reduced by well over 50%.

The ship may produce what looks like a larger rolling bow wave but this may not be solid water. It is not a solid rolling wave as might be produced by a relatively bluff bowed vessel like a large tanker or bulk carrier. It is produced by a relatively small amount of water running up the bow plating and then being pushed forward and away from it as it slows vertically.

Thus the Police video of the *Pride of Bilbao* en route was misleading to this extent. The apparently solid looking rolling wave shown in the video is spray forced up and away from the bulbous bow

which was not fully submerged and the broken water and spray immediately round the bow did not extend out to the full breadth of the hull. What was seen in the video was the top of the bulb rather than the water surface.

The video did however show that there was no strong radiating wave pattern from the bow. Nor was there a strong radiating wave pattern from the stern. The crest on the port and starboard quarters was not breaking and there was no white water other than from the turbulent flow close to the side of the ship and the wake immediately behind the transom. In a view from the starboard aft quarter there was a standing wave more or less parallel to the ship. It was difficult to determine its magnitude. It may result from the turbulent and swirling flow produced by the propellers. Interestingly the frame of reference from the Police launch is moving at a similar speed to the ship. The water appears to be rushing past the ship at great speed whereas the ship is moving past the water. This is likely to affect the perception of the viewer. Indeed the still photographs taken from the video, without explanation would have been sufficient to persuade a jury that to get anywhere near the ship would have been fraught with disaster.

The wave making resistance of the ship increases rapidly with increasing speed. Essentially the influence of the ship on wave making extends out for a relatively short distance. Even at 25 metres off, the contours of the ship have little effect on the shape of the wave. By 50 metres the effect has almost disappeared.

The conclusion of the experts was that in long crested waves representative of the conditions at the time of the presumed incident, the effect of the presence of the ship travelling at 21.5 knots on the wind driven waves would generally be small, particularly round the bow; there would have been little effect beyond 25 metres off the side. At the stern there could have been significant reinforcement of the stern waves out to about 25 metres off but this would have diminished rapidly between 25 and 50 metres. At 50 and 75 metres off there would be very little effect either at the bow or the stern. Thus at the bow, to encounter anything different to the current modified wind driven sea state, the *Ouzo* would have to be 12.5 metres or less off. Amidships the ship would have very little effect on the height or steepness of the wind driven waves. If the yacht had passed 25 metres or less off the stern the waves could have been significantly worse than the wind driven waves. The area is turbulent because of the accelerated flow into it from the sides and under the stern, the immersed transom and the turbulence of the propellers. The effect of the ship rapidly diminishes beyond 25 metres so that by 50 metres the sea state would be very little changed.

As regards interaction, the results of the investigation showed that except for very small transverse separations the interaction forces and moments between ships were generally relatively small. This means that it required a long exposure to them to have a significant influence on their headings or separations. At a distance off of 25 metres one would not expect the repulsion and attraction forces at the bow and along the side to be particularly large. Further, the forces would not have been acting for a lengthy period of time. Even at an initial separation of 25 metres it is unlikely that the *Ouzo* was pulled towards the *Pride of Bilbao* significantly.

It seems that the interaction of the two vessels would have been different to that between the dredger *Bowbelle* and the disco boat *Marchioness* where in the MAIB report it was said "*..when a relatively large ship is overtaking a smaller one the latter will tend to sheer across the bow of the*

former. Where the two vessels are very close the effect can be so great that the smaller vessel loses all control. It is highly likely that this effect was a cause probably the major cause of the Marchioness *sheering across the bow of the* Bowbelle*".* The more pronounced effect arises because with the two vessels travelling in the same direction the forces from the large, overtaking vessel acting on the smaller, slower vessel would be applied for a relatively long time allowing a substantial response for the latter. The RYA in *"Top Tips: Rules of the Road"* published in 2009 and updated in 2013 described the interaction of the *Ouzo* and the *Pride of Bilbao* as *"much less subtle".*

As regards swamping, according to the experts, at about 0100 BST the sea state would have been quite severe for a yacht of the size of the *Ouzo*. The biggest waves would have been in the range of 3 to four metres high, crest to trough and there would have been a significant number of breaking waves as the current from the ebb tide flowed against the wind driven waves. Around the bow of the *Pride of Bilbao* the wind driven waves would not have been modified significantly by the passage of the ship. If the *Ouzo* had been passed by the *Pride of Bilbao* the response of the *Ouzo* would not have been significantly different to her response in the same sea state in the absence of the larger ship unless she had been very close to the side or even inside the line of the side. The breaking bow wave of the ship does not appear to extend out beyond the beam of the ship around the bow in still water. Amidships the effect of the ship on the sea state is limited but it is more significant around the stern.

If the *Ouzo* had passed 25 metres or less off the stern of the ship the waves could have been significantly worse than the wind driven waves. The effect of the ship diminishes rapidly beyond 25 metres so that by 50 metres off the waves experienced would have been very little changed from the current modified wind driven sea state.

Thus if the *Ouzo* had been passed by the *Pride of Bilbao* with an initial separation of 25 metres or more, the *Ouzo* would not have been particularly affected by the waves generated around the ship because their effect would have been relatively small compared with the current modified wind driven sea state at the time. Inside 25 metres off the stern the effect of the ship on the waves would have been more significant and this could have caused problems for a small craft like the *Ouzo* with a risk of her being knocked down by a large steep breaking wave.

The effect of the ship on the sea state rapidly diminishes with distance off so that except for the area around the stern the waves experienced by the yacht could almost be considered as unmodified by the ship.

FLOODING POTENTIAL OF THE *OUZO*

The experts considered the flooding potential of the *Ouzo*. The height of the sill formed by the bottom edge of the cabin access companionway opening was 0.245 metres below the deck and the bottom of the opening in the cockpit coaming in way of the tiller and about 0.78 metres above the design waterline. There are three washboards and it is likely that in light of the conditions at least one or two would have been in place. With one washboard in place the height of the companionway sill from the cockpit would be increased by 0.29 metres. A second washboard raises it by a further 0.3 metres.

It is difficult to see how substantial amounts of water could get down into the cabin. If the cockpit was filled by a wave, only part of its contents above the level of the companionway sill would get down into the cabin. The volume above the sill and below the opening in the transom coaming is about 0.8 cubic metres. If this much water flowed into the cabin it would not immediately threaten the stability of the yacht or prevent measures being taken to stop further ingress, to seek assistance or prepare a life raft.

With three tonnes of water in the hull the level would only be a little way above the cabin side though it would be moving from side to side above the deck.

Even with no washboards, the passage of several tonnes of water into the cockpit seems unlikely unless there was already a substantial amount of water in the hull so that the freeboard aft had been reduced and the cockpit was being almost continually refilled by the waves. Until there is about 4.5 tonnes of water in the hull the vessel would remain stable and upright albeit with significantly reduced margins of stability. If the sails had been left up and were allowed to fill, for example if the sheets were cleated off then the yacht would have heeled to a large angle but would not have capsized. She would probably have rounded into the wind emptying the sails so that she could come slowly upright again. If the amount of water had exceeded 4.5 tonnes the freeboard aft would have started to come down quite rapidly as the hull sank lower into the water and the bow trim came off. By the time there were 6 tonnes in the hull the yacht would have had a significant stern trim and the freeboard from the water level in the cockpit to the companionway sill would have been only a few centimetres with rapid flooding expected at that stage.

ACTIONS OF OTHER OFFICERS

The Defence needed to show if possible what other officers might have done in similar circumstances. A number of mariners were called to give evidence. There is little point rehearsing their evidence here.

MOBILE PHONE EVIDENCE

The final piece in the jigsaw was to check the mobile phone evidence. Paul Vella was instructed to examine the range and areas covered by the various cells engaged by the mobile phones used by the crew of the Ouzo in order to determine whether one might determine positions at the time of the call.

Each of the mobile operators provides coverage to the country via cell towers all of which have unique Ids. Each cell tower can provide coverage with a radius of many kilometres, factors such as buildings and geographic conditions contributing to the actual area of coverage.

Paul Vella was sent out to sea in order to seek to determine the extent of the area of coverage provided by certain cells, bearing in mind that once beyond the shore there was nothing to interrupt a signal. He went far enough to demonstrate that the area of coverage is significant. Connection to certain cells could have occurred *"almost anywhere in a vast area to the south of the Isle of Wight".* He was able to demonstrate which cell was likely to be the strongest at particular points. The evidence of mobile calls was important because it was possible to fit the evidence with other radar

evidence to demonstrate that when a call was made at 23:00:53 before the Ouzo had passed Shanklin, it may be that she was not making particularly good progress at that time.

THE LAW

To be guilty of manslaughter the jury had to be satisfied so that they were sure that it was the *Pride of Bilbao* which had come into close proximity with the *Ouzo* and caused her to sink and that it was not the *Crescent Beaune* or some other vessel. If it was the *Pride of Bilbao* they had to be sure that the man accused, Mr Hubble first owed a duty of care to the crew of the *Ouzo*. They must then be satisfied that there was a breach of that duty of care and that he caused in the sense of being a significant or substantial or more than minimal cause of, their deaths. To be in breach of that duty of care it had to be proved that his actions were grossly negligent bearing in mind the risk of death. Gross negligence is more than simple negligence. It is such negligence as to warrant condemnation. It carries a degree of turpitude. In other words, it must be shown that when judged on an objective basis the defendant demonstrated such a departure from the proper standard of care incumbent upon him that he should be judged criminal. It must be demonstrated that there was a failure to advert to a serious risk going beyond mere inadvertence, in respect of an obvious and important matter which the defendant's duty demanded he should address. A conviction for manslaughter does not depend on the defendant's state of mind although as in *Misra* and *Attorney General's Reference (No 2 of 1999)* evidence of state of mind can be relevant to the circumstances for the jury to consider as to the grossness and criminality of conduct. Hence the reference to what was said by the officer after the yacht (whether the *Ouzo* or not) had passed and appeared to be tacking away. Contributory negligence does not provide a defence.

See **R v ADOMAKU 1995 1AC 171; KHAN 1998 CRIM LR 830; A-G REFERENCE (NO 2 OF 1999); R V DPP EX P JONES 2000 CRLR 858; R V MISRA and SRIVASTAVA 2005 1CR APP R 21; R V BROWN (URIAH) 2005; R V YAQOOB 2005 9 ARCHBOLD NEWS 2; MARSDEN COLLISIONS AT SEA.**

Merchant Shipping Act 1995 deals with the duties following collision and imposes duties upon the master of each ship involved in a collision to assist the other ship. S92 provides that it is the duty of the master of each ship if and so far as he can do so without damage to his own ship, crew and passengers to render to the other ship, its master, crew and passengers such assistance as may be practicable and may be necessary to save them from any danger caused by the collision and to stay by the other ship until he has ascertained that it has no need of further assistance.

It matters not whose fault the collision might be. The duty is clear.

CAUSE OF THE SINKING AND CONCLUSIONS OF THE JURY

So what was the cause of this disaster? Perhaps the *Pride of Bilbao*. Perhaps the *Crescent Beaune*. But then what of the weather? Whilst the *Ouzo* was capable of sailing a moderate sea and the crew was competent, the sea conditions at night were not as comfortable as one might wish. The Met Office evidence based in part on ship observations for the area calculated a maximum wave height to be as high as twice the significant wave height or 3.5 metres. A computer simulation put maximum wave height at nearly four metres crest to trough.

The jury was either not satisfied that the Ouzo was sunk by the *Pride of Bilbao* or if she had been, that the officer of the watch was negligent in not taking measures to ensure that the yacht was safe or that if the officer of the watch was negligent, such negligence was so grave as to justify condemnation sufficient to make him guilty of manslaughter.

The fact that the jury was unable to agree a verdict on the Section 58 count suggests that some at least accepted that it was the *Pride of Bilbao* which had either collided with the *Ouzo* or had come into close quarters with her and the officer should have reacted accordingly. Alternatively there may have been any number of permutations in the minds of individual jurors. It is impossible to know.

The Defence had to approach the case using the "ABC" principles of detective work namely "*accept nothing, believe nothing and challenge everything"* in order to seek to get to the truth.

What we got was uncertainty about what did happen.

I recall the feelings as the last line was drawn on the sea chart by Captain Healy as we brought together the conclusions of the experts and we were able to show that it may be the case that it was not the *Pride of Bilbao* which had come into close proximity with the *Ouzo*. Rather it may have been a tanker whose Master had stood his watch down.

For a seafarer to be accused of failing to act so as to save another in distress is a dreadful condemnation. It was plain, we submitted on the evidence that the officer of the watch and the crew of the *Pride of Bilbao* had acted properly when they saw a yacht (whether the *Ouzo* or some other yacht) pass the ship. They watched for her as she emerged from the stern. They observed her lights and as I recall believed that she was tacking and was thus safe.

THE AFTERMATH

A number of issues arose from the investigation into the accident. The MAIB report concluded that after a period of time the lenses of combined plastic masthead units are prone to crazing as the plastic becomes diffuse due to heating from the lamp thus reducing luminosity. Good practice dictated that bridge watch keepers should arrive on the bridge 10 minutes prior to the start of their watch to allow time for the handover at night for their eye sight to adapt to the dark. That timing was insufficient. Potential problems with photochromic lenses were highlighted. Moderate sea conditions with the west south westerly wind might impact on radar visibility.

Thus recommendations were made to Maritime and Coastguard Agency in relation to bridge lookouts wearing photochromic lenses; to MCA and RYA in relation to the ineffectiveness of radar reflectors and the inability of ships radars to detect small yachts in moderate sea conditions; to British Marine Federation in relation to the mounting of reflectors; to BMF and BSI in relation to the fitting of life jackets and in particular crotch straps; to the International Chamber of Shipping in relation to adjustment times for watch keepers at night and blackout procedures.

In particular an MAIB flyer to the Leisure Industry noted that navigation lights are prone to crazing; lamp bulbs can be inadvertently replaced with bulbs of a lower rating; filaments may be damaged; if a yacht heels more than 5 degrees the horizontal intensity of her navigation lights may be decreased; a yacht's crew should not hesitate to do everything in their means to attract attention

by e.g. shining a torch on the sails; best radar reflectors should be fitted; crotch straps should be fitted and worn; an EPIRB and/or life raft with hydrostatic release unit should be available.

In 2003 in the English Channel in thick fog the yacht *Wahkuna* was in collision with a container ship P&O *Nedlloyd Vespucci.* There was a problem with interpretation of the radar and the yacht sank. The crew abandoned to the life raft and were saved. Thus the need to have a life raft on deck is highlighted.

Many yachts have AIS Class B receivers as an adjunct to radar. The COLREGS do not require it and it is suggested that there is no substitute for visual and radar information. The AIS sends and receives heading, position, rate of turn and identification data over two VHF channels. A class A type transceiver which knows its own vessels data calculates the closest point of approach and time remaining. The Class B AIS transceiver broadcasts with lower power than the class A transponders and do not send position updates as often (See *Real world AIS October 2014 Power and Motoryacht*). It is said that plotters and radars may filter out signals from the Class B AIS transponders carried by yachts and that the yachts crew should always assume that they have not been detected by the larger vessel.

It is recommended that the yacht must avoid close quarter situations with the larger vessels. Such a situation is said to be within a mile but the yacht's skipper should work on the basis of 2 miles which is said to be the distance the side lights on an MV can be seen and at this stage alter course so as not to present himself as the*" stand on"* vessel (see *"Fairway"* Newsletter of the Small Craft Group and the Marine Traffic & Navigation Group) Autumn 2012.

The impact of this matter has been felt as far afield as Australia where following the collision between the fishing vessel *Allena* and the 30685 tonne *MV Northern Fortune* an Antigua and Barbuda registered container ship on 21st January 2008 it was determined in the ATSB Transport Safety Investigation Report that the lookout on both vessels was ineffective , the *Allena* was not fitted with an AIS and the *Northern Fortune's* third mate did not stop to render assistance to the *Allena* because, he said that he believed that it was only a close quarters passing. In the report it is noted that *"(Mr Hubble) was acquitted of the charge of manslaughter because it could not be proved with sufficient certainty that* Pride of Bilbao *was the ship involved in the collision. He stated that he believed that the yacht was in no difficulty after seeing its lights astern following the incident and did not positively establish the safety of the smaller vessel or stop to render assistance".*

The MAIB report in relation to lenses continues to be referred to in the recommendation of certain glasses. The Australian Maritime Authority has issued a safety notice that photochromic lenses should not be worn for lookout duties at night.

CONCLUSION

Whether it was right to prosecute Mr Hubble will be a matter for debate. The Boulton Lecture 2010 entitled "*Criminalisation or Fair Treatment of Seafarers"* delivered by Captain Richards A Coates FNI Company of Master Mariners of Australia makes interesting reading.

As was said by Paul Gelder in the preface to his book entitled "*Total Loss" "We may never know what really happened in the case of* Ouzo *but the loss of Rupert Saunders, James Meaby and Jason*

Downer all in their mid thirties was a tragedy which threw a spotlight on a host of valuable lessons which may help save lives in the future"

As for the *Pride of Bilbao*, she has returned home and sails between Stockholm and St Petersburg stopping in Tallinn. She will no longer collect marine data for Southampton University. Nor will she serve to carry whale watchers as she sails across the Bay of Biscay.

RICHARD BARRACLOUGH QC

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