SHERIFFDOM OF GRAMPIAN, HIGHLAND AND ISLANDS AT WICK

[2023] FAI 6

WCK-B52-22

DETERMINATION

BY

SHERIFF GARY AITKEN

UNDER THE INQUIRIES INTO FATAL ACCIDENTS AND SUDDEN DEATHS ETC (SCOTLAND) ACT 2016

into the deaths of

PAWEL CHRUSCINSKI, JAROSLAW ORLOW, ROMAN TAMAS, JEROME NARVASA, HENRYK DUBANOWSKI, TOMASZ KWIATKOWSKI, ARTUR WEGOREK, AND ARTUR PODRAZKA

Inverness, 6 February 2023

Determination

The sheriff, having considered the information presented at the inquiry, determines in terms of the Inquiries into Fatal Accidents and Sudden Deaths etc. (Scotland) Act 2016, (hereinafter referred to as "the 2016 Act"):

In terms of section 26(2)(a) of the 2016 Act (when and where each of the deaths occurred)

The late Pawel Chruscinski, born 18 March 1971, died at around 13.16 hours on 2 January 2015 in the Outer Sound of the Pentland Firth in the area of coordinates 58°

43.2.N - 003° 09.0.W, while in the course of his employment on the specialist cement carrying vessel, Cemfjord.

The late Jaroslaw Orlow, born 27 March 1969, died at around 13.16 hours on 2 January 2015 in the Outer Sound of the Pentland Firth in the area of coordinates 58° 43.2.N-003° 09.0.W, while in the course of his employment on the specialist cement carrying vessel, *Cemfjord*.

The late Roman Tamas, born 17 February 1958, died at around 13.16 hours on 2 January 2015 in the Outer Sound of the Pentland Firth in the area of coordinates 58° 43.2.N - 003° 09.0.W, while in the course of his employment on the specialist cement carrying vessel, *Cemfjord*.

The late Jerome Narvasa, born 1 September 1982, died at around 13.16 hours on 2 January 2015 in the Outer Sound of the Pentland Firth in the area of coordinates 58° 43.2.N - 003° 09.0.W, while in the course of his employment on the specialist cement carrying vessel, *Cemfjord*.

The late Henryk Dubanowski, born 5 May 1959, died at around 13.16 hours on 2 January 2015 in the Outer Sound of the Pentland Firth in the area of coordinates 58° 43.2.N - 003° 09.0.W, while in the course of his employment on the specialist cement carrying vessel, *Cemfjord*.

The late Tomasz Kwiatkowski, born on 18 January 1983, died at around 13.16 hours on 2 January 2015 in the Outer Sound of the Pentland Firth in the area of coordinates 58° 43.2.N - 003° 09.0.W, while in the course of his employment on the specialist cement carrying vessel, *Cemfjord*.

The late Artur Wegorek, born 7 September 1990, died at around 13.16 hours on 2 January 2015 in the Outer Sound of the Pentland Firth in the area of coordinates 58° 43.2.N - 003° 09.0.W, while in the course of his employment on the specialist cement carrying vessel, *Cemfjord*.

The late Artur Podrazka, born 5 September 1990, died at around 13.16 hours on 2 January 2015 in the Outer Sound of the Pentland Firth in the area of coordinates 58° 43.2.N - 003° 09.0.W, while in the course of his employment on the specialist cement carrying vessel, *Cemfjord*.

In terms of section 26(2)(b) of the 2016 Act (when and where any accident resulting in the deaths occurred)

The accident which resulted in the deaths of Pawel Chruscinski, Jaroslaw Orlow, Roman Tamas, Jerome Narvasa, Henryk Dubanowski, Tomasz Kwiatkowski, Artur Wegorek and Artur Podrazka was the sudden capsize of the *Cemfjord* which occurred at around 13.16 hours on 2 January 2015. At that time the position of the *Cemfjord* was recorded as being at 58° 43.2.N - 003° 09.0.W, which is a position just to the west of the passage known as the Outer Sound, between the islands of Stroma and Swona in the Pentland Firth.

In terms of section 26(2)(c) of the 2016 Act (the cause or causes of each of the deaths)

The cause of the death of Pawel Chruscinski was drowning.

The cause of the death of Jaroslaw Orlow was drowning.

The cause of the death of Roman Tamas was drowning.

The cause of the death of Jerome Narvasa was drowning.

The cause of the death of Henryk Dubanowski was drowning.

The cause of the death of Tomasz Kwiatkowski was drowning.

The cause of the death of Artur Wegorek was drowning.

The cause of the death of Artur Podrazka was drowning.

In terms of section 26(2)(d) of the 2016 Act (the cause or causes of any accident resulting in the deaths)

The cause of the accident resulting in the deaths of Pawel Chruscinski, Jaroslaw Orlow, Roman Tamas, Jerome Narvasa, Henryk Dubanowski, Tomasz Kwiatkowski, Artur Wegorek and Artur Podrazka was the sudden capsize of the *Cemfjord* in violent sea and weather conditions during her westbound transit of the Pentland Firth.

In terms of section 26(2)(e) of the 2016 Act (any precautions which (i) could reasonably have been taken and (ii) had they been taken, might realistically have resulted in death, or any accident resulting in death, being avoided)

The entry of the *Cemfjord* to the Outer Sound of the Pentland Firth could reasonably have been delayed until tidal and weather conditions were more favourable to her westbound passage and that might realistically have resulted in her capsize and the resultant deaths of her officers and crew being avoided.

In terms of section 26(2)(f) of the 2016 Act (any defects in any system of working which contributed to the deaths or the accident resulting in the deaths)

There were no defects in any system of working which contributed to the deaths or the accident resulting in the deaths.

In terms of section 26(2)(g) (any other facts which are relevant to the circumstances of the deaths)

There are no other facts relevant to the circumstances of the deaths of

Pawel Chruscinski, Jaroslaw Orlow, Roman Tamas, Jerome Narvasa,

Henryk Dubanowski, Tomasz Kwiatkowski, Artur Wegorek and Artur Podrazka.

Recommendations

In terms of sections 26(1)(b) of the 2016 Act (recommendations (if any) as to (a) the taking of reasonable precautions, (b) the making of improvements to any system of working, (c) the introduction of a system of working, (d) the taking of any other steps, which might realistically prevent other deaths in similar circumstances)

There are no recommendations made.

NOTE

Legal Framework

[1] This inquiry was held in terms of section 1 of the 2016 Act and was governed by the Act of Sederunt (Fatal Accident Inquiry Rules) 2017 (hereinafter referred to as "the

2017 Rules"). This fatal accident inquiry was presented by the Crown as a mandatory inquiry in terms of section 2 of the 2016 Act as Pawel Chruscinski, Jaroslaw Orlow, Roman Tamas, Jerome Narvasa, Henryk Dubanowski, Tomasz Kwiatkowski, Artur Wegorek and Artur Podrazka died as a result of an accident in the course of their employment or occupation.

[2] The purpose of this inquiry is set out in section 3 of the 2016 Act as being to establish the circumstances of the deaths and to consider what steps, if any, might be taken to prevent other deaths in similar circumstances. It is not intended to establish liability, either criminal or civil. The inquiry is an exercise in fact finding, not fault finding. It is not open to me to engage in speculation. The inquiry is an inquisitorial process. The Crown, in the form of the Procurator Fiscal, represents the public interest.

[3] In terms of section 26 of the 2016 Act the inquiry must determine certain matters, namely where and when the deaths occurred, when any accident resulting in the deaths occurred, the cause or causes of the deaths, the cause or causes of any accident resulting in the deaths, any precautions which could reasonably have been taken and might realistically have avoided the deaths or any accident resulting in the deaths, any defects in any system of working which contributed to the deaths, and any other factors relevant to the circumstances of the deaths. It is open to the Sheriff to make recommendations in relation to matters set out in subsection 4 of section 1 of the 2016 Act.

Introduction

[4] This inquiry was held into the deaths of Pawel Chruscinski, Jaroslaw Orlow, Roman Tamas, Jerome Narvasa, Henryk Dubanowski, Tomasz Kwiatkowski, Artur Wegorek and Artur Podrazka. They were the officers and crew of the *Cemfjord*, a specialist cement carrying ship in the course of a voyage from Rordal, Denmark to Runcorn, England. In the course of that voyage the *Cemfjord* capsized in the Pentland Firth on 2 January 2015 in very poor sea and weather conditions. Tragically, all eight of her officers and crew died as a result.

[5] Preliminary hearings were held at Inverness Justice Centre by Webex on 6 October 2022 and 17 November 2022. It was clear that much of the evidence was not likely to be disputed and the Crown undertook to prepare a joint minute of agreement.

[6] The inquiry proceeded at Inverness Justice Centre by Webex on 6 December 2022, 7 December 2022 and 8 December 2022. A hearing on submissions proceeded at Tain Sheriff Court by Webex on 18 January 2023. Mr D Glancy, Procurator Fiscal Depute, represented the Crown. Mr B Smith KC, advocate, represented three companies, namely Partenreederi MS "Baltic Sun", Brise Bereederungs GmbH & Co KG and Baltrader Schiffahrsgesellschaft mbH & Co KG, respectively the owners of the *Cemfjord*, the technical and commercial managers of the *Cemfjord* and the chartering managers of the *Cemfjord* (hereinafter collectively referred to as "Brise"). Mr P Gray KC, advocate, represented the Maritime and Coastguard Agency (hereinafter referred to as the "MCA"). Mr N Smith, solicitor, represented the Republic of Cyprus, on behalf of the Attorney General of the Republic of Cyprus. The Republic of Cyprus (hereinafter

referred to as "Cyprus") was the Flag State of the *Cemfjord*. No other parties were represented. Parties lodged a substantial joint minute of agreement. I accepted the facts set out in the joint minute of agreement. The findings in fact listed at paragraphs [12] to [29] below are derived from the joint minute of agreement.

[7] The Crown lodged an inventory of documentary productions as follows:

1. Copy documents in relation to Pawel Chruscinski
2. Copy documents in relation to Jaroslaw Orlow
3. Copy documents in relation to Roman Tamas
4. Copy documents in relation to Jerome Narvasa
5. Copy documents in relation to Henryk Dubanowski
6. Copy documents in relation to Tomasz Kwiatkowski
7. Copy documents in relation to Artur Wegorek
8. Copy documents in relation to Artur Podrazka
9. E-mails – 16 December 2014 to 22 January 2015
10. E-mails – 23 December 2014 to 30 December 2014
11. Statement of survey dates by Fleet Online
12. Marine Accident Investigation Branch (hereinafter referred to as the "MAIB") report in respect of *Karin Schepers* August 2011
13. MAIB report in respect of *Multitank Ascania* March 1999
14. MAIB report in respect of *Priscilla* July 2018
15. Tidal Stream Atlas NP 209 (Orkney and Shetland islands)

16. Admiralty Sailing Directions NP 52 (North Coast of Scotland Pilot) pages 69 – 72

17. Maritime Chart - Pentland Firth and Approaches

18. Maritime Chart – Fair Isle to Wick

19. Survey Statement

20. Quantity of Certificates

21. Internal Audit Report

22. Quantity of Automatic Identification System (hereinafter referred to as "AIS") tracks

A. 6 March 2014

B. 31 March 2014

C. 17 May 2014

D. 7 October 2014

23. Twenty nine photographs (Brise) – A to CC

24. General Arrangement – *Cemfjord*

25. Noreq User Manual

26. Eleven photographs (Northlink) A to K

27. Orkney Isles Vessel Traffic Services (hereinafter referred to as "VTS") data

    A. Zoomed in accident

    B. Zoomed in fast

    C. Zoomed out accident

D. Zoomed out accident fast

28. Tidal and Wave data

A. DHI Hindcast

B. Dr John Lawrence Wave data

29. Photograph of Zodiac rescue boat

30. MAIB report in respect of *Cemfjord*

31. Annexes to MAIB report in respect of *Cemfjord*

32. Extract from log of *Hrossey* 3 January 2015

33. Safety Management System Manual

34. MCA Vision Incident Log – 3 January 2015 to 11 February 2015

35. Marico Marine review of the Pentland Firth Vessel Traffic Reporting Scheme

[8] The Crown lodged a list of labelled productions as follows:

1. Search and Rescue Helicopter video footage

2. Northlink video footage

3. Recording of audio communications between Shetland Coastguard Operations Centre and *Cemfjord* on 2 January 2015

[9] The Crown lodged a list of witnesses as follows:

1. Captain John Allan Scott, c/o Northlink Ferries, Jamieson's Quay, Aberdeen

2. Captain Leszek Tomasz Brancewicz, c/o Brise Bereederungs GmbH & Co. KG, Hamburg

3. Captain Miroslaw Bracha, c/o Pentland Ferries, Pier Road, St Margaret's Hope, Orkney
4. Susan Todd, Divisional Commander, c/o MCA, Marine House, Blaikies Quay, Aberdeen
5. Heidi Clevett, Head of Technical Infrastructure, c/o MCA, Spring Place, 105 Commercial Road, Southampton
6. Captain Gavin Pritchard OBE, Senior Inspector (Retired), c/o MAIB, First Floor, Spring Place, 105 Commercial Road, Southampton

I heard oral evidence from all six Crown witnesses. Each of the Crown witnesses submitted signed written statements, the contents of which they adopted in the course of their oral evidence. This was of considerable assistance to the inquiry.

[10] Brise lodged an inventory of documentary productions as follows:

1. Department of Shipping, Cyrus letter to Brise Bereederungs dated 16 December 2013
2. MCA Notice if Release from Detention Form dated 18 December 2013
3. E-mail exchange between Brise Bereederungs , Class Surveyors, DNV-GL and Consul General of Republic of Cyprus dated 4 December 2014 to 20 December 2014
4. Interim Cargo Ship Safety Certificate for *Cemfjord* dated 30 December 2014

5. E-mail exchange between Brise Bereederungs, Consul General of the Republic of Cyprus together with attached Waiver regarding bilge pumps dated 13 December 2014

6. DNV-GL (Classification Society) Survey of Cemfjord dated 13 December 2014

7. Circular Fleet Safety Notices issued to all cement carrier vessels dated 5 January 2015

8. Brise Bereederungs – Instruction for measuring of cargo settling, sampling and determining cargo density dated 30 September 2015

9. Brise Bereederungs – Extract copies of instruction for cargo density, level and settling measurements, Brochure 01/2016 and associated literature

10. Brise Bereederungs Circular No. 46 (Rev. 1) dated 30 September 2015 in respect of safe carriage of cement products

11. Brise Bereederungs Circular No 46 (Rev 2) dated 23 December 2015 in respect of safe carriage of cement products

12. Record of MRM training provided by Brise Bereederungs for all Masters and vessels to period 17 March 2020

13. Record of Cemload training provided by Brise Bereederungs for all crew and vessels to period 10 November 2022

14. Record of LSA Handling training with Hatecke provided by Brise Bereederungs for all crew and vessels to period September 2019

15. Letter from Kai-Erik Clemmesen, Managing Director of Brise Bereederungs to Captain Gavin Pritchard, Senior Inspector, MAIB dated 15 February 2016

16. Letter from Harding Safety to Brise Bereederungs re Zodiac rescue craft as installed aboard *Cemfjord* dated 4 February 2016

17. Survitec Group – Zodiac rescue boat – Specification and dimensions sheet, issue 7 dated 28 October 2015

18. Recommendation Response Form prepared by Brise Bereederungs and issued to MAIB with covering letter from Kai-Erik Clemmesen dated 20 May 2016

19. Reply from MAIB to Brise Bereederungs regarding the Recommendation Response Form dated 18 July 2016

20. E-mail exchange between Kai-Erik Clemmesen of Brise Bereederungs to the MAIB's Tracey Hill regarding the above dated 26 July 2016 to 28 July 2016

21. Copy Stakeholders' letter issued by Kai-Erik Clemmesen of Brise Bereederungs – 2015

[11] Brise lodged a list of witnesses as follows:

1. Kai-Erik Clemmesen, Managing Director, c/o Brise Bereederungs GmbH & Co KG, Hamburg

I heard oral evidence from Mr Clemmesen. Mr Clemmesen submitted a signed written statement, the contents of which he adopted in the course of his oral evidence. This was of considerable assistance to the inquiry.

The facts

[12] That the *Cemfjord* (previously named the *Margareta*), was a merchant vessel, built in Bremen in 1984, 83 metres in length with a gross tonnage of 1850 tonnes. She was converted in 1998 to become a dedicated cement carrier, after which she sailed regularly between Denmark and the United Kingdom, discharging at the ports of Runcorn, Goole and Londonderry.

[13] That at the time of the accident, and for some years beforehand, the *Cemfjord* was on a long-term time charter to Aalborg Portland Cement. As with every standard time charter contract, it is the time charterer, in this case Aalborg Portland Cement, who decides all the important aspects of the vessel's forthcoming voyages such as ports of call, cargo to carry, estimated times of loading and unloading etc. The time charterer will then instruct the ship directly in that regard. All operational reporting in that connection was between the ship's Master and the time-charter directly. Aalborg Portland Cement have operated cement carriers for decades as an ongoing aspect of their cement distribution from the cement factory in Aalborg, Denmark to supply centres such as Runcorn, England.

[14] That having loaded 2084 tonnes of white cement at the Aalborg Cement loading terminal, Rordal, Denmark, the *Cemfjord* sailed on its final voyage at 14.00 hours on

30 December 2014. Her intended departure time had been delayed by five hours as a result of difficulties in loading her cargo. Her destination was Runcorn, England where it expected to dock sometime on the morning of 5 January 2015.

[15] That in the course of said voyage the *Cemfjord* sailed a route westwards across the North Sea, intending to sail around the North of Scotland, which required a transit through the Pentland Firth, the channel between the Scottish mainland coast at Caithness and the Orkney Islands. The Pentland Firth is a shipping channel where challenging and occasionally extreme tidal and weather conditions are both well documented and known to mariners.

[16] That the Master of the *Cemfjord* in the course of said voyage was Pawel Chruscinski, a Polish national, born 18 March 1971. He had worked for Brise for many years, progressing from Rating to Officer, Chief Officer and finally Master. He had been the regular Master of the *Cemfjord* since 2008 and held the internationally recognised qualifications necessary for that position. He was an experienced master mariner.

[17] That the Chief Officer of the *Cemfjord* in the course of said voyage was Jaroslaw Orlow, a Polish national, born 27 March 1969. He had been appointed Chief Officer of Cemfjord on 11 October 2014. He was a well-qualified and experienced mariner. He was the navigating officer of the *Cemfjord* and responsible for passage planning of voyages, subject to the approval of the Master.

[18] That the Chief Engineer of the *Cemfjord* in the course of said voyage was Roman Tamas, a Polish national, born 17 February 1958. He had joined the crew on 25 November 2014. He was an experienced marine engineer.

[19] That the Second Engineer of the *Cemfjord* in the course of said voyage was Jerome Narvasa, a Filipino national, born 1 September 1982. He had joined the crew on 1 October 2014.

[20] That the first Able Bodied Seaman of the *Cemfjord* in the course of said voyage was Henryk Dubanowski, a Polish national, born 5 May 1959. He had joined the crew in 2007. He had previously served as a Boatswain and was an experienced and well qualified seaman.

[21] That the second Able Bodied Seaman of the *Cemfjord* in the course of said voyage was Tomasz Kwiatkowski, a Polish national, born 18 January 1983. He had joined the crew on 10 December 2014. He was an experienced seaman.

[22] That the first Ordinary Seaman of the *Cemfjord* in the course of said voyage was Artur Wegorek, a Polish national, born on 7 September 1990. He had joined the crew on 1 October 2014. He was an experienced seaman and in addition to general duties he was the ship's cook.

[23] That the second Ordinary Seaman of the *Cemfjord* in the course of said voyage was Artur Podrazka, a Polish national, born on 5 September 1990. He had joined the crew on 8 December 2014. He had previously sailed as a deck cadet on other vessels before qualifying as a seaman.

[24] That AIS is an internationally used maritime geolocating system, whereby a vessel carries a transceiver which relays its position, course and speed to other vessels and shore based maritime authorities. This data can be displayed on a computer screen or electronic maritime chart. The International Maritime Organization's International Convention for the Safety of Life at Sea requires AIS to be fitted aboard international voyaging ships with 300 or more gross tonnage. In the course of said voyage the *Cemfjord* was equipped with an AIS transceiver which was operating correctly.

[25] That the *Cemfjord* had sailed westwards through the Pentland Firth on previous voyages and in particular on 6 March 2014, 31 March 2014, 17 May 2014 and 7 October 2014.

[26] That AIS and radar contact was lost with the *Cemfjord* at around 13.16 hours on 2 January 2015. At that time the position of the *Cemfjord* was recorded as being at 58° 43.2.N - 003° 09.0.W, which is a position just to the west of the Outer Sound passage between the islands of Stroma and Swona in the Pentland Firth.

[27] That at 20.21 hours or thereby on 3 January 2015, the *Cemfjord* sank. It has been located at a depth of 70 metres at position 58° 40.198.N - 002° 32.811.W, where it remains.

[28] That on 5 January 2015 a search and rescue helicopter found a life raft adrift which had been reported by a passing vessel approximately seventy nautical miles east of the *Cemfjord's* last recorded AIS position. The helicopter winchman recovered the maintenance records from said life raft, which established that it came from the *Cemfjord*. Having recovered these records, he punctured the buoyancy chambers which caused the

life raft to sink. There was no one in the life raft and no evidence that there had ever been anyone in the life raft.

[29] That no human remains of any of the crew of the *Cemfjord* have ever been found.

[30] That on 6 March 2014, 31 March 2014, 17 May 2014 and 7 October 2014, while under the command of Pawel Chruscinski, the *Cemfjord* altered her transit of the Pentland Firth to mitigate the worst effects of the sea and tidal conditions.

[31] That on 2 January 2015 the weather conditions in the Pentland Firth were very poor with a severe westerly gale blowing.

[32] The tidal conditions for a westward transit of the Pentland Firth at around 13.15 hours that day were particularly challenging in that a strong tide was running causing tidal races to form to the west of the islands of Stroma and Swona.

[33] That on 2 January 2015 the *Cemfjord* sought to transit the Pentland Firth. The combination of the weather conditions and tidal conditions made passage through the Pentland Firth inadvisable and very hazardous. No steps were taken to mitigate the worst effects of the weather, sea and tidal conditions. The timing of her transit of the Outer Sound was at the worst time for the prevailing wind and tidal conditions.

[34] That in the course of said transit the *Cemfjord* encountered extreme weather, sea and tidal conditions which overwhelmed her at 13.16 hours resulting in a sudden, catastrophic capsize of the vessel and the deaths of all eight of her officers and crew.

The evidence

Evidence of Captain John Allan Scott

[35] Captain Scott gave evidence on 6 December 2022. He adopted the terms of his signed statement, which had been lodged with the Inquiry.

[36] Captain Scott confirmed that he is currently the Master of the *Hrossey*, a ferry operated by Northlink Ferries on the Lerwick-Kirkwall-Aberdeen route. He was also the Master of the *Hrossey* in January 2015. He is qualified as a Master Mariner. He is a native of the Orkney Islands and has many years' experience of the seas around the Orkney Islands. He has previously worked as a fisherman in the local area and worked on two different ferries operating across the Pentland Firth from the Scottish mainland to the Orkney Islands. These were the *Pentalina*, sailing between Gills Bay, Caithness and St Margaret's Hope, South Ronaldsay, operated by Pentland Ferries and the *Hamnavoe*, sailing between Scrabster, Caithness and Stromness, Orkney, operated by his current employers, Northlink Ferries. He is very familiar with the tidal, sea and weather conditions in the Pentland Firth.

[37] Captain Scott confirmed that the *Hrossey* was not scheduled to sail on 31 December 2014 or 1 January 2015 and was tied up in Lerwick for the New Year period. The ferry was due to sail from Lerwick to Aberdeen, via Kirkwall, at 17.30 hours on 2 January 2015. That sailing was delayed because of bad weather. Captain Scott explained that over the New Year period there had been westerly gales and the sea state between Shetland and Fair Isle was not good. The sea height was predicted to be around 10 metres, which Captain Scott considered too dangerous for his vessel to sail in.

He was concerned about big waves which would cause the vessel to roll, possibly leading to a shift in the cargo. It would also be very uncomfortable for the passengers.

[38] The *Hrossey* sailed from Lerwick about 06.30 hours on 3 January 2015 and headed to Kirkwall. The voyage was uneventful. She arrived in Kirkwall about 11.26 hours the same day and departed for Aberdeen about 12.45 hours the same day. Captain Scott was in command of the vessel when leaving Kirkwall and initially took a more westerly course than normal to keep clear of a local fishing boat. The *Hrossey* was travelling at around 23 knots.

[39] About 14.16 hours on 3 January 2015 Captain Scott was off watch and received a telephone call from the bridge telling him that one of the bridge lookouts had spotted an upturned hull in the water. He immediately made his way to the bridge, but expected the object to be a steel cargo container which had been washed overboard from a container vessel, not the hull of a ship. On arrival on the bridge he ordered that the *Hrossey* alter course to investigate the object. It was clear that the object was indeed the upturned hull of a vessel.

[40] Captain Scott instructed that a video and still photographs be taken to record the hull and ensured that notes were kept in the log book of the *Hrossey*. He was referred to Crown Label 2 which he confirmed was the video footage taken at the time, to Crown production 32 which he confirmed to be the corresponding extract from the log book of the *Hrossey* and to Crown production 26, a series of still photographs of the upturned hull. The upturned hull was seen to be the bow section of a commercial vessel and the name "*Cemfjord*" was also clearly visible. Captain Scott arranged for the Coastguard to

be notified. He understood that the Coastguard had not been aware of an issue with the *Cemfjord* before this sighting of her hull.

[41] The *Hrossey* was due east of the Pentland Skerries when the hull of the *Cemfjord* was spotted.

[42] In relation to the visual images shown to him Captain Scott commented that the hull of the *Cemfjord* was remarkably clean, leading him to conclude that she must have been in dry dock fairly recently. The foremast appeared to be bent at a 45 degree angle, possibly caused by the impact of a big wave or impact with the seabed while upturned. The metal safety rails visible on the starboard side appeared distorted, which he thought might be due to heavy seas. On initially being seen the hull was partially floating, upturned, in the water. As Captain Scott observed the vessel it appeared to settle by the stern and the bow could be seen, captured on video, extending vertically from the water, with the water moving around it and the hull stationary. Captain Scott confirmed that he was aware that the water depth in the area was about 73 to 76 metres and he suspected that the stern of the *Cemfjord* was now resting on the seabed.

[43] In accordance with instructions from the Coastguard the *Hrossey* began a box search of the area, pending the arrival of other search and rescue assets. Other than a large piece of wood, possibly from a pallet or something like that, the lookouts on the *Hrossey* did not see anything. Once two local RNLI lifeboats and a Coastguard helicopter were on site and the Coastguard tug, *Heracles*, was in the vicinity, the *Hrossey* was allowed to stand down from search duties and continued her voyage to Aberdeen.

[44] Captain Scott explained that commercial vessels, like the *Cemfjord*, are obliged to carry an Emergency Position Indicating Rescue Beacon, commonly referred to as EPIRB. This is a device which is designed to float free in the event of coming into contact with water and transmit a position and distress message on 406 MHz. The *Hrossey* could not pick up such a transmission but the Coastguard shore stations can and would co-ordinate search and rescue efforts accordingly.

[45] Captain Scott gave a description of the Pentland Firth. The Firth is the channel of water between mainland Scotland and the Orkney Islands. At the eastern end of the Firth there are two islands, Stroma and Swona. Stroma is the southern of the two. The channel of water between Stroma and Swona is referred to as the Outer Sound. The Inner Sound is between Stroma and the mainland. There is an area of water to the west of the Outer Sound known as the Merry Men of Mey. This is a tidal race a mile to a mile and a half wide. This is well known to be an area of very rough water. If the wind and tides are opposing each other the seas can be very high. Captain Scott described this area as being "pretty horrendous" in a gale. On 2 January 2015 the westerly gale blowing in Lerwick would also have been blowing in the Pentland Firth. A westerly gale is a strong wind blowing from west to east. There can be a tide flowing from east to west between 8 and 10 knots in strength. If a vessel slows down or reduces power the water flowing over the rudder is reduced and steering can be lost. Sea conditions there can be "atrocious".

[46] Captain Scott stated that the *Hrossey* is 125 metres long, has a gross tonnage of 11720 tonnes and the engines produce around 29,000 horsepower. She is considerably

larger and more powerful than the *Cemfjord*. Given the prevailing weather and sea conditions on 2 January 2015 he would not have attempted to transit the Pentland Firth in the *Hrossey*.

[47] He was later advised that the hull of the *Cemfjord* had sunk.

[48] The other participants to the inquiry had no cross examination for Captain Scott and there was no re-examination.

Evidence of Captain Leszek Tomasz Brancewicz

[49] Captain Brancewicz gave evidence on 6 December 2022. He adopted the terms of his signed statement, which had been lodged with the Inquiry.

[50] Captain Brancewicz described his career, confirming that he was a qualified Master, and explaining his current role as a Designated Person Ashore. He is the link between a vessel and Brise in relation to safety issues. He has worked for Brise throughout his career. He explained the relationship between Partenreederi MS "Baltic Sun", Brise Bereederungs GmbH & Co. KG and Baltrader Schiffahrsgesellschaft mbH & Co KG. He stated that the *Cemfjord's* officers were employed directly by Brise and her seamen by an agency.

[56] Captain Brancewicz was referred to Crown productions 1, 2, 3, 4, 5, 6, 7 and 8 and confirmed that these documents contain copies of identity documents, employment documents and documents confirming the qualifications of Pawel Chruscinski, Jaroslaw Orlow, Roman Tamas, Jerome Narvasa, Henryk Dubanowski, Tomasz Kwiatkowski, Artur Wegorek and Artur Podrazka respectively. He confirmed

that these were the officers and crew of the *Cemfjord* on her last voyage.

Pawel Chruscinski, the Master of the *Cemfjord*, was personally known to Captain Brancewicz and had worked for Brise for a long time. He was the regular Master of the *Cemfjord*.

[57] Captain Brancewicz explained that at the time of the loss of the *Cemfjord* Brise operated twenty three vessels, nine of which were cement carriers, one was a roll on/roll off vessel, one was a general cargo vessel and the rest were container ships. All of the cement carriers had names beginning with "Cem". He described the *Cemfjord* by reference to Crown production 24, which showed her general arrangement. The production contained a number of naval architect's drawings of her layout. She was 85 metres long. The engine output was originally 600 kW. Her foremast should be vertical. She had two holds for bulk cement powder. Each hold had a triangular void under it which contained the bilges. She had a flat stern. He was referred to Crown production 23, containing a number of photographs for the *Cemfjord* and which he described for the assistance of the Inquiry.

[58] Captain Brancewicz went on to describe the arrangements for carrying out safety drills in relation to Brise ships, including the *Cemfjord*. He also described the lifesaving equipment available on the Cemfjord. He explained that originally the Cemfjord have been equipped with a lifeboat on each side of the vessel, one equipped with an engine and one powered by oars. In addition she was fitted with two life rafts. The life boats were launched and recovered using davits on deck. There were issues with the reliability of the davits and the engine fitted to the powered lifeboat. The *Cemfjord* was

in dry dock in Poland in November and December 2014 for a refit and the decision was taken to replace the life boats at that time. Captain Brancewicz described the process for obtaining permission from the vessel's flag state for such alterations. In the case of the *Cemfjord* the flag state was Cyprus.

[59] During the refit the starboard lifeboat, which had been the one with an engine, was replaced with a rescue boat with a new davit system for launch and recovery. The rescue boat intended for the Cemfjord was not available by the conclusion of the refit and a temporary one was sourced. The intended rescue boat was anticipated to be available in January 2015. The rescue boat was of the rigid "Zodiac" type. After the refit, in addition to the rescue boat the *Cemfjord* now carried three life rafts instead of two, each with a capacity of 12 persons, the port side lifeboat having been replaced with a life raft.

[60] Captain Brancewicz explained that the *Cemfjord* sailed from her refit in Poland to Rordal, Denmark where she took on a cargo of cement. He described the process for loading her. She thereafter left Rordal for Runcorn, England on what turned out to be her final voyage. At the time she left Poland the *Cemfjord* was subject to two temporary waivers from her flag state, Cyprus, allowing her to sail with alternative equipment pending repairs. These related to temporary bilge pumps and the temporary rescue boat. Captain Brancewicz described these arrangements in some detail. His evidence was that these temporary waivers did not affect her seaworthiness in any way.

[61] Captain Brancewicz was referred to Crown production 9, a series of e-mail communications between the *Cemfjord* and Brise following her departure from Poland.

He confirmed that the vessel was obliged to report in at least once every 24 hours. The e-mails describe the loading of the *Cemfjord*, her arrival and departure times, the estimated time of her arrival at her intended destination, her position and a brief indication of the state of the weather. Captain Brancewicz did not describe anything unusual in these communications. It was clear that the vessel's progress after leaving Rordal was slowing due to heavy weather. The final report was sent at 08.32 hours on 2 January 2015 narrated a westerly wind, force 9 on the Beaufort scale.

Captain Brancewicz agreed that there were two possible routes from Rordal to Runcorn, either south through the English Channel or north through the Pentland Firth. He stated that Brise did not mandate a route and which one to take was up to the discretion of the Master of the vessel.

[62] Captain Brancewicz stated that as a result of the loss of the *Cemfjord* and the recommendations contained in the MAIB report into her loss Brise carried out a review of procedures and have implemented a significant number of initiatives to enhance safety culture within the company, going beyond what was recommended in the MAIB report.

[63] The other participants to the inquiry had no cross examination for Captain Brancewicz and there was no re-examination.

Evidence of Captain Miroslaw Bracha

[64] Captain Bracha gave evidence on 6 December 2022. He adopted the terms of his signed statement, which had been lodged with the Inquiry.

[65] Captain Bracha is a Polish national. He confirmed that he has been a professional sailor all his working life. He has worked all over the world. He is a qualified master mariner. For the last fifteen years he has worked for Pentland Ferries, initially for two years on the specialist livestock ferry and since then on the main passenger and vehicle ferry.

[66] On 2 January 2015 the ferry operating was the *Pentalina*. She is a catamaran with four propellers and four engines and is capable of 17 knots. Captain Bracha described the *Pentalina* as a powerful, speedy boat.

[67] The ferry is scheduled to make three return trips a day between Gills Bay, Caithness and St Margaret's Hope, South Ronaldsay, transiting the Pentland Firth. He was referred to Crown production 30, the MAIB report an in particular to Figure 35 on page 39 and confirmed the route of the *Pentalina* on 2 January 2015 shown on the map in Figure 35. Captain Bracha is very familiar with the Pentland Firth and described it as quite a dangerous place. He stated that you could pass through it ten or twenty times in nice weather but that if the tide is working against the swell or it is stormy in the Atlantic Ocean the Pentland Firth can be very rough. A westerly wind with the ebb tide in the opposite direction gives big turbulence, like a wall of water. He stated that conditions can be very, very difficult. He is aware that the *Cemfjord* is not the only vessel to have suffered difficulties in the Merry Men of Mey, a tidal race in the Pentland Firth to the west of the islands of Stroma and Swona, running across from Mey to Hoy.

[68] On 2 January 2015 two of the scheduled ferry sailings were cancelled because of the adverse weather. The *Pentalina* sailed from St Margaret's Hope for Gills Bay at

13.00 hours, the lunchtime sailing having been delayed for an hour due to the conditions. Captain Bracha chose to sail to the east of Swona and Stroma. He felt that the conditions were quite safe. He chose the eastern route as he considered that the route to the west of Swona and Stroma could have been "very, very dodgy". He could not see the sea conditions to the west because of mist.

[69] As the *Pentalina* sailed between Swona and Stroma Captain Bracha saw a vessel passing across his bows, about a mile away. He checked on radar and AIS and confirmed that the vessel was not on a collision course with him. He was able to confirm from the AIS information that the vessel was the *Cemfjord*. The *Cemfjord* was travelling from east to west. She was sitting straight up and down in the water, quite deep and with a small freeboard making Captain Bracha think that she was fully loaded. He thought she was speeding up, maybe making 6 or 7 knots, but it could have been 10 or 12 knots with the tide. There was an ebb tide running from east to west. There was nothing about the *Cemfjord* that looked unusual. Captain Bracha did not know that the *Cemfjord* carried a largely Polish crew. Had he known he would have radioed to say hello and exchange pleasantries, as is his habit if he encounters other Polish mariners.

[70] Captain Bracha explained that vessels such as the *Cemfjord* are required to advise the Coastguard by radio when they enter the Pentland Firth but he did not hear any such radio call from the *Cemfjord*. He thought it likely that the radio call would have been made before the *Pentalina* got underway and that is why he did not hear the *Cemfjord* reporting in.

[71] Captain Bracha did not see any other vessels on 2 January 2015. He could not see the sea and weather conditions to the west of Stroma.

[72] The other participants to the inquiry had no cross examination for Captain Bracha and there was no re-examination.

Evidence of Susan Todd

[73] Mrs Todd gave evidence on 7 December 2022. She adopted the terms of his signed statement, which had been lodged with the Inquiry.

[74] Mrs Todd is currently the MCA Divisional Commander for East of Scotland, South West Scotland and Northern Ireland. She has held that post since 2015. In January 2015 she was the coastal safety manager with MCA. Between 2 January 2015 and 4 January 2015 she was the on call MCA duty officer for the East of Scotland, covering both Aberdeen and Shetland Maritime Rescue Co-ordination Centres (MRCC). The *Cemfjord* sank in the area covered by the Shetland MRCC.

[75] Mrs Todd described the operation of the Pentland Firth Voluntary Reporting Scheme in January 2015. The scheme is in place because of the dangerous tidal currents and sea conditions that exist in the Pentland Firth. The channel is narrow, there is limited sea room and the area has a very notorious reputation for dangerous sea conditions. The scheme is voluntary. Vessels transiting the Firth are not required to comply with it. Vessels which do comply notify the Coastguard MRCC by radio on entry to the Firth and on exit from the Firth. Mrs Todd recalled that at the time Shetland MRCC and Aberdeen MRCC shared these duties, although she could not recall if that

was on a week on/week off or fortnight on/fortnight off basis. The Shetland MRCC was monitoring the Pentland Firth reporting scheme on 2 January 2015.

[76] Mrs Todd confirmed that she had previously listened to Crown Label 3 which contains an audio recording of the entry report made by radio from the *Cemfjord* to Shetland MRCC on 2 January 2015. She was also referred to Crown production 31, Annex B, which contains a transcript of that conversation. Mrs Todd had also helpfully included that transcript in her own signed statement. Of particular relevance, the person providing the data from the *Cemfjord* confirmed that there were eight persons aboard and "there are no defects, everything working totally". At the conclusion of the transmission the Coastguard operator stated, "As we can monitor your progress on AIS there is no requirement to report in when you leave the Pentland Firth area". Mrs Todd confirmed that this was not standard practice and that vessels should also report on exiting the Pentland Firth, if they had reported on entering. He understanding was that entry and exit reports were expected when Aberdeen MRCC were monitoring the scheme.

[77] Mrs Todd described the operation of the AIS and the information which is available to Coastguard operators, which is displayed as a "blip" on a computer screen. The name of the ship, call sign, heading and speed can be displayed. AIS is mandatory for commercial vessels, such as the *Cemfjord*, but is voluntary for leisure craft and the detail available for leisure craft fitted with AIS is often less.

[78] Mrs Todd confirmed that although there are MCA staff based in the Orkney Islands, such as coastal rescue teams, there is no MRCC in Orkney. She was aware that a

traffic management system is used by the Orkney harbour authorities which monitors maritime traffic by radio and radar. The Shetland MRCC has no radar coverage of the Pentland Firth.

[79] The current position in relation to the MCA management of Voluntary Reporting Schemes, including the one in the Pentland Firth, is more robust and pro-active. Mrs Todd stated that a review in 2015, prompted by the loss of the *Cemfjord* and by improvements in technology had brought about a number of improvements. Training for AIS operators has been improved and AIS is used more proactively to monitor and track vessels.

[80] Mrs Todd was personally involved in co-ordinating the search and rescue response once the hull of the *Cemfjord* was reported by the Master of the *Hrossey*. She confirmed that no EIPRB transmission had been received from the *Cemfjord*. She confirmed that her understanding is that an EIPRB will not operate if it is submerged in water and will only transmit if it is on the surface of the sea. No distress call or Mayday had been received. Mrs Todd described a large scale search and rescue operation utilising multiple RNLI lifeboats and two Coastguard helicopters as well as the Coastguard tug *Heracles* and a number of commercial vessels who volunteered to help.

[81] From the MCA incident log Mrs Todd could confirm that around 21.00 hours on 3 January 2015 the Heracles reported that visibility was poor and it was starting to snow. Only the bow of the *Cemfjord* was visible above the surface. Shortly thereafter the bow was lost to view and the *Cemfjord* sank.

[82] A Royal Navy warship was in a position to provide a further helicopter to assist in the search on 4 January 2015. The hope was that life rafts or survivors might be spotted, but the search was in vain. At 13.00 hours on 4 January 2015 the search and rescues efforts were scaled down, although the Heracles remained on station where the Cemfjord sank. The MAIB were advised. Mrs Todd was satisfied that all the search and rescue efforts that could reasonably have been made had been exhausted.

[83] The other participants to the inquiry had no cross examination for Mrs Todd.

Evidence of Heidi Clevett

[84] Miss Clevett gave evidence on 7 December 2022. She adopted the terms of his signed statement, which had been lodged with the inquiry. She is the Head of the technical Infrastructure team at MCA.

[85] Miss Clevett gave detailed evidence about the operation of the Voluntary Reporting Scheme for vessels in the Pentland Firth. It is one of five voluntary schemes managed by the MCA in United Kingdom waters, four of which are in Scottish waters. In addition, there are two Mandatory Reporting Schemes in United Kingdom waters. One covers the Dover Straight, the shipping lane with the highest density of shipping anywhere in the world. These schemes are overseen by the International Maritime Organisation (hereinafter referred to as the "IMO"). The IMO can be thought of as the maritime branch of the United Nations. The source of concern in the Pentland Firth is not shipping density but weather and especially tidal conditions.

[86] Miss Clevett provided background information in relation to earlier incidents in the Pentland Firth, previous MAIB reports and the MCA response to those reports. She confirmed that as a result of the loss of the Cemfjord and the recommendations contained in the MAIB report into the incident the MCA commissioned an independent report from Marico Marine to review the Voluntary Reporting Scheme for vessels in the Pentland Firth. That report had been lodged as Crown production 35.

[87] Following the loss of the *Cemfjord* and advances in technology Miss Clevett explained that a more robust and pro-active approach was now taken by MCA operations room staff in relation to monitoring vessel movement in the Pentland Firth. AIS data is used to make proactive contact with vessels who have not reported in voluntarily to "encourage" them to do so. Training for operations room staff has been enhanced. Miss Clevett accepted that the crew of the *Cemfjord* had reported entry to the Pentland Firth on 2 January 2015, in compliance with the Voluntary Reporting Scheme.

[88] Miss Clevett also explained that as the Reporting Schemes are under the auspices of the IMO the MCA cannot unilaterally alter the Pentland Firth scheme from a voluntary one to a mandatory one. She described the steps taken by the MCA, since January 2015, to have the Pentland Firth scheme made mandatory. Despite representations, the IMO has decided that the reporting scheme should remain a voluntary one, noting a very high level of compliance with the reporting scheme.

[89] In addition, Miss Clevett confirmed that the reporting scheme is essentially a vessel traffic management tool intended to enhance the safety of vessels at sea.

However, MCA staff cannot advise not give directions to Masters as to the navigation of their vessels. The responsibility lies with the Master.

[90] The other participants to the inquiry had no cross examination for Miss Clevett and there was no re-examination.

Evidence of Captain Gavin Pritchard OBE

[91] Captain Pritchard gave evidence on 7 December 2022. He adopted the terms of his signed statement, which had been lodged with the inquiry. Captain Pritchard served in the Royal Navy for thirty years, commanding a number of warships. He joined the MAIB as an accredited marine accident investigator and was the lead inspector and author of the MAIB report in relation to the loss of the *Cemfjord*, lodged as Crown production 30, with the annexes to the report lodged as Crown production 31. In 2018 Captain Pritchard was promoted to Principal Inspector and retired from the MAIB on 18 November 2022. I had no hesitation in accepting his expertise in maritime matters.

[92] Captain Pritchard confirmed that the *Cemfjord* did not carry, and was not required to carry, a voyage data recorder (a device similar to the "black box" carried by commercial aircraft). He further confirmed that there were no survivors from her officers and crew, no eyewitnesses to her capsize and that other than visual external examinations by remotely operated submersibles it had proved impossible to recover any other data from the vessel after she sank.

[93] He stated that the MAIB report was published in April 2016 and adopted the contents of the report as part of his evidence. He had attended at the Coastguard

Operations Room in Aberdeen as soon as he had been notified of the incident involving the *Cemfjord*. Captain Pritchard gave evidence in relation to a number of aspects of his report.

[94] Of particular relevance to the inquiry, Captain Pritchard explained the process of passage planning for a vessel. He stated that it is a requirement of the Safety of Life at Sea (SOLAS) International Convention that the master of a vessel ensures that the voyage has been planned. All the IMO member states (including the United Kingdom and Cyprus) are signatories to SOLAS. He explained that passage planning covers every aspect of the route of a vessel from leaving a berth to tying up at the next berth. Passage planning is usually carried out by a navigating officer, subject to the approval of the master. On 2 January 2015 the responsibility for passage planning on the *Cemfjord* fell to her Chief Officer, Jaroslaw Orlow, subject to the approval of her master, Pawel Chruscinski. Passage planning is a dynamic process which requires to be updated throughout the voyage, to take account of changing circumstances, such as weather. The passage plan for the *Cemfjord's* voyage from Rordal to Runcorn was lost when she sank.

[95] Captain Pritchard noted that Pawel Chruscinski was a very experienced seaman with a long professional career and with a long association with the *Cemfjord*. He had carried out the same voyage as her master several times and would have been familiar with the route.

[96] Captain Pritchard gave a description of the Pentland Firth, describing it as "notorious" with some of the most brutal sea conditions a vessel can encounter.

[97] He discussed the Voluntary Reporting Scheme for vessels in the Pentland Firth and the MAIB's recommendation that the scheme should be reviewed with a view to making it compulsory. He noted that such a review has now been carried out. The scheme remains a voluntary one.

[98] Under reference to paragraph 1.9.3 of the MAIB report, Captain Pritchard explained the data available to mariners from the Admiralty Sailing Directions in relation to the Pentland Firth, particularly in relation to the tidal conditions. He confirmed that hard copies of this data was available aboard the *Cemfjord*. He explained that the tidal conditions were the same with each change of tide and the tidal stream would always cause a tidal race, which required careful consideration, but that a strong opposing wind would make the sea conditions much worse. He also explained that a westerly tide and a westerly wind are actually going in opposite directions. A westerly tide flows towards the west. A westerly wind is blowing from the west.

Captain Pritchard quoted paragraph 3.135 of the Admiralty Sailing Directions –

> "When the west going tidal stream is opposed by strong westerly of north westerly winds there is a heavy breaking sea, which can be dangerous to small coasters, in mid-Firth west of Swona and Stroma. In these conditions passage through the Firth **should not be attempted** and mariners are advised to proceed east of Swona and await favourable conditions in Long Hope."

He stated that at the time of the *Cemfjord's* transit of the Pentland Firth on 2 January 2015 there was a westerly tide and an opposing westerly severe gale. He described the Cemfjord as a very typical coastal merchant ship, not necessarily low powered, but fairly slow with a top speed of 9 or 10 knots. She did not have a lot of power to get out of

danger. She would need to take extreme care in the Pentland Firth. Her power and speed were fairly typical for her size.

[99] Captain Pritchard stated that rather than going north through the Pentland Firth the *Cemfjord* could have used an alternative route, passing south through the English Channel instead, which was longer and would have added at least twenty four hours to her journey time. He confirmed that distance and time were not the only factors to be considered in passage planning and that the southern route would involve considerably more sea traffic.

[100] Captain Pritchard described the operation of AIS and confirmed that he had been able to recover and analyse the AIS data for the *Cemfjord* for the calendar year of 2014. This confirmed that the *Cemfjord* had sailed from Rordal to Runcorn with Pawel Chruscinski as master a number of times and had always used the northern route through the Pentland Firth. Captain Pritchard noted that on 6 March 2014, 31 March 2014, 17 May 2014 and 7 October 2014 the AIS data showed that the Cemfjord had altered course, delayed, or otherwise interrupted her passage through the Pentland Firth. By cross reference to the tidal conditions Captain Pritchard was satisfied that these alterations had all been to avoid the worst of the tidal conditions in the Pentland Firth. On each of these occasion the master had been Pawel Chruscinski. The AIS data for the passage on 2 January 2015 did not reveal any similar alteration or course.

[101] Captain Pritchard noted that on 7 October 2014 the *Cemfjord* had aborted passage through the Pentland Firth and reversed course to avoid unfavourable sea and tidal conditions. During this alteration of course the cement cargo shifted resulting in a list to

port. The crew were mustered at their emergency stations but by flooding water into the starboard wing ballast tanks the vessel was stabilised and the voyage continued.

[102] Captain Pritchard stated that the weather forecasts for the Pentland Firth for 1 January 2015 and 2 January 2015 had predicted severe westerly gales. Those predictions were accurate and wind speeds of 63 knots (around 72 miles per hour) were recorded. This would have produced very high waves, probably around ten metres in height.

[103] By reference to the map depicted in Figure 35, at page 39 of the MAIB report Captain Pritchard described the tidal race known as the Merry Men of Mey. This tidal race occurs just west of the passage between Stroma and Swona. The race forms on each tide. Spring tides are the strongest and on 2 January 2015 the tide was at 38% of the spring maximum. There was also a severe westerly gale blowing. Captain Pritchard stated that in light of the prevailing tidal and weather conditions the worst time to try to transit from east to west in the Pentland Firth on 2 January 2015 would have been between 11.00 hours and 2.30 hours.

[104] Captain Pritchard referred to Figure 54, at page 74 of the MAIB report, which depicts the AIS data from the Cemfjord for 2 January 2015 as she transited the Pentland Firth. He explained that the AIS data gives the position, heading and speed of the ship. The heading is the direction the chip is pointing in, by compass bearing. The direction of travel of the ship may well be different and at an angle to the heading of the ship. This can be influenced by tidal conditions. The *Cemfjord's* final heading was at an angle to her direction of travel and at an angle to the tidal stream. The vessel's speed through

the water had reduced significantly and her ability to steer would have been compromised. Captain Pritchard explained that a flow of water was necessary over the rudder of the vessel for the vessel to steer. If steerage were lost, the vessel would be at the mercy of the oncoming seas.

[105] Captain Pritchard referred to radar data recovered from the Orkney Islands vessel traffic management system. Although the *Cemfjord* did not enter the Orkney vessel management system it she was detected by their radar. Captain Pritchard described the *Cemfjord* as a "good" radar target with lots of flat sides on her superstructure to reflect radar waves. He interpreted the radar data which contained in Crown production 27 and replicated in Figures 42 and 43 of the MAIB report. He described the radar return from the *Cemfjord* and explained that the computer which analyses the radar returns would interpret sufficiently large waves as a ship and show them on the radar plot. On 2 January 2015 the radar picture of the Pentland Firth showed a large number of very large waves, particularly directly in the path of the *Cemfjord* immediately before her radar image and AIS data stopped. The data showed that the *Cemfjord* was beam on to the sea immediately before her AIS data was lost, causing a very great risk of capsize. Captain Pritchard was satisfied from the information he had ingathered that the *Cemfjord* had indeed suffered a sudden catastrophic capsize at this time. No mayday message was transmitted. There was no evidence that the crew had tried to abandon ship.

[106] Captain Pritchard was referred to Figure 2, at page 6 of the MAIB report, which showed a photograph of the *Cemfjord* leaving Rordal for the final time. He confirmed

that her foremast was visible and vertical. He was then referred to the Production 26, the photographs of the *Cemfjord's* hull taken from the *Hrossey*, and in particular to the photograph J, showing the hull vertical in the water. He confirmed that the foremast was now bent at a 45 degree angle and agree that this damage could have been caused by a particularly strong wave. He stated that the *Cemfjord* had not floated over shallow enough water for the damage to have been caused by dragging along the sea bed while the hull was upturned.

[107] Captain Pritchard confirmed that the rescue boat from the *Cemfjord* had later been recovered, in a damaged condition. Examination of the wreck of the *Cemfjord* confirmed that the rescue boat had been ripped free by the sea rather than being launched. Likewise, a life raft from the *Cemfjord* was found by one of the Coastguard helicopters. There was no evidence that anyone had been in the life raft.

Captain Pritchard explained the automatic deployment of the life rafts in the event of the vessel foundering. He stated that the presence of a life raft was not indicative of the crew having tried to abandon ship.

[108] Captain Pritchard explained the steps taken in two underwater surveys carried out using remotely operated submersibles to survey the wreck of the *Cemfjord*. These surveys had produced a detained echo sounding image of the wreck and a number of photographs, which are reproduced on pages 30 to 34 of the MAIB report. The vessel is lying on her port side on the sea bed. Bad weather and tides prevented the completion of the first survey and the second survey was carried out. The visibility in the water was

very poor. These surveys confirmed that the loss of the vessel was not due to any structural failure in the hull.

[109] The other participants to the inquiry had no cross examination for Captain Pritchard and there was no re-examination.

Evidence of Kai-Erik Clemmesen

[110] Kai-Erik Clemmesen gave evidence on 8 December 2022. He adopted the terms of his signed statement, which had been lodged with the Inquiry.

[111] Mr Clemmesen is the Managing Director of Brise Bereederungs GmbH & Co. KG. He described the relationship between Partenreederi MS "Baltic Sun", Brise Bereederungs GmbH & Co. KG and Baltrader Schiffahrsgesellschaft mbH & Co KG. He went on to describe the response by Brise to the loss of the *Cemfjord* and the recommendations contained in the MAIB report.

[112] Mr Clemmesen also described the emotional effect of the tragic loss of the *Cemfjord* on the staff at Brise and explained certain practical steps which Brise had taken to assist the bereaved families of the *Cemfjord's* crew in the aftermath of her sinking.

[113] The other participants to the inquiry had no cross examination for Mr Clemmesen and there was no re-examination.

Crown submissions

[114] Mr Glancy lodged written submissions on behalf of the Crown. These had been helpfully circulated to the other parties to the inquiry in advance of the hearing on

submissions. Mr Glancy was not available for the hearing on submissions and the Crown submissions were read by his colleague, Ms S Swan, Procurator Fiscal Depute. He made formal submissions in relation to Section 26(2)(a), (b), (c), (d), (f) and (g) of the 2016 Act and did not propose that I make any recommendations in terms of Section 26(1)(b) of the 2016 Act. These reflected my own views of the evidence and I have followed Mr Glancy's submissions in the formal section at the beginning of this Determination.

[115] In relation to Section 26(2)(e) of the 2016 Act, namely any precautions which may reasonably have been taken which might realistically have resulted in the deaths or the accident resulting in the deaths having been avoided, Mr Glancy provided a detailed summary and analysis of the evidence before me, which I consider is worth quoting in full.

> "7.2 The master of the *Cemfjord* was Pawel Chruscinski, a Polish national, born 18 March 1971. He had been master of the vessel since 2008 and held the internationally recognised qualifications that qualified him for the post. The *Cemfjord* regularly sailed among ports in North West Europe and on its final journey, from Rordal in Denmark to Runcorn, Cheshire, would have discharged almost two thousand one hundred tonnes of dry powdered cement. This was a regular destination and Captain Chruscinski would have been familiar with the route often taken by his vessel around the North of the United Kingdom and through the Pentland Firth, the channel between the North coast of Scotland and the Orkney Isles.
>
> 7.3 It is well documented and deemed to be within the knowledge of seafarers that challenging and occasionally extreme tidal and weather conditions can reasonably be expected to be encountered by vessels transiting this seaway in either direction.
>
> 7.4 Evidence was led from Captain Gavin Pritchard OBE, a Principal Inspector of Marine Accidents in the Marine Accident Investigation Branch, and

the author of the MAIB report into the vessel's capsize and sinking (Production Numbers 30 and 31 (Annexes)).

7.5 His report, from pages 38 to 41 inclusive, describes the hazards of the Pentland Firth, quoting extensively from Admiralty publications. The conditions that mariners can expect to encounter there are well known and detailed advice is available in the Admiralty Sailing Directions (also known as the 'Admiralty Pilot') (Production Number 16) and an accompanying Tidal Streams Atlas for the area (Production Number 15). The *Cemfjord* was known to carry both of these on board in addition to paper charts of the areas she would navigate.

7.6 In particular, the Admiralty Pilot contains information about the most notorious tidal race in the Firth, known as the 'Merry Men of Mey' (reproduced at para 3.110 et seq., page 40 of Production Number 30). This extends the width of the Firth, from Tor Ness on Hoy to Saint John's Point on the Scottish mainland. These directions make it clear that the most challenging conditions can be expected four hours and twenty minutes after high water, Dover, the times of which coincide with tidal patterns locally. At that period, it cautions that the 'West going stream has attained its full strength, heavy breaking seas extend the whole way across the Firth'. This is absent any consideration of prevailing wind conditions.

8.1 The UK Meteorological (Met) Office also issues daily weather forecasts, transmitted on both public radio systems and repeated by Coastguard staff on maritime VHF radio channels.

8.2 There was, therefore, from various sources, variously from Admiralty publications and maritime charts, both on board the *Cemfjord* and augmented by these daily broadcasts, sufficient information available to those on board with responsibility for the vessel's passage planning and navigation, to vary the time at which the vessel entered the Outer Sound to avoid the most challenging periods of the ebb tide in commencing its transit.

8.3 Captain Pritchard's investigations included an analysis of four of the *Cemfjord's* previous Westbound transits through the Pentland Firth under command of Captain Chruscinski in the twelve-month period preceding the vessel's loss.

8.4 These are referred to at section 1.10 of his report (Production Number 30, pages 44 to 46). On these occasions (6 March 2014, 31 March 2014, 17 May 2014 and 7 October 2014), analysis of Automatic Identification System (AIS) tracks sailed by the vessel demonstrated that it had 'loitered' at the eastern end of the Pentland Firth before entering the Outer Sound. The inference can be reasonably

drawn that this was done to optimise the tidal conditions before commencing a transit. His analyses took no account of any wind or other weather conditions which prevailed on these occasions.

8.5 The forecast conditions for 2 January 2015 are set out at page 14 of Production Number 30. The Met Office forecast for that day, issued at 0500 hours, broadcast on public airwaves and repeated verbatim by MCA, forecast the wind as being 'west 7 to severe gale 9, occasionally storm 10',and the sea state as being 'rough or very rough in the east, very rough or high in (the) north'

8.6 The accuracy of this forecast was verified by windspeeds recorded at weather stations close to the Pentland Firth that day, where gusts in excess of 60 and 70 knots (69 to 80 miles per hour) were recorded. This observed weather data, according to Captain Pritchard, confirmed that the wind speeds were indeed worse than had been forecast.

9.1 A hindcast obtained by MAIB from the Met Office determined that wave heights that day were likely to have been in the order of 10 metres in the area where the *Cemfjord's* radar return and AIS signal were lost.

9.2 Captain Pritchard, during his investigations, also obtained and analysed the *Cemfjord's* AIS track from 2 January from a point in the North Sea at which its AIS signal was received at around 05.00 hours, until that signal was lost as a result of her capsize. A pictorial representation of that, at page 81 of Production Number 30, shows the steady westward progress of the vessel, with none of the manoeuvres shown in the four previously analysed transits where it was apparent that positive action had been taken to delay her passage.

9.3 Captain Chruscinski perished along with his crew. The MAIB report makes clear (section 2.6 at page 75) that passage planning was the responsibility of the Chief Officer, in this case Jaroslaw Orlow, who had joined the vessel on 11 October 2014. However, any adjustments to the plan in mid-voyage would require consultation with the master. Both men perished in the tragedy and in the absence of any evidence from any source, no clues have been left to any of the factors considered by them in transiting the Firth when they did.

9.4 What is clear however, is that at just after 13.10 hours that day coincided with the period of four hours and twenty minutes after high water when the sea conditions would have been at their worst, leaving aside any consideration of the effects of wind. The winds that day, being Westerly, thus coming from the West at severe gale or storm force, were in opposition to the tidal flow, creating what Captain Pritchard described as 'extraordinarily violent breaking seas' with

waves of ten metres in height or even in excess of that which would have been encountered in the area of the capsize.

9.5 It is also significant that on that day, Pentland Ferries, with a much larger and significantly more powerful vessel, had cancelled two of its return crossings. The witness Captain Miroslaw Bracha, the master of the *Pentalina*, had adjusted the departure time of the only southbound sailing that day to optimise the tidal conditions. The route of that sailing was to the East of the two islands of Stroma and Swona, where the conditions, in relative terms, would have been more benign than on their West side. His was the last vessel to observe the *Cemfjord* as it sailed westwards, but in the lee of these islands, although there was nothing remarkable about its progress when he observed it.

10.1 Similarly, Captain Allan Scott, who also gave evidence, stated that he had postponed the time of his ferry's departure from Lerwick by thirteen hours as a result of the weather. As a native Orcadian and career mariner who is well acquainted with these waters, his hesitation in taking his vessel, the *Hrossey*, a significantly larger and more powerful vessel than the *Cemfjord*, reflected the prudence shown by Captain Bracha. It is to Captain Scott and his crew that credit must be given for the discovery of the *Cemfjord*, twenty-five hours after her capsize. But for his own vessel's delayed departure from its usual schedule and the particular course it set on 2 January, West of her usual course for Aberdeen, the *Cemfjord* might well never have been discovered.

10.2 The decisions made by the masters of both the *Pentalina* and *Hrossey* underscore the fact that, notwithstanding that these vessels are owned by commercial entities and run to timetables, any critical decisions predicated on seamanship and vessel safety remain the sole domain of the master.

10.3 It is against this background that the *Cemfjord*, a small coaster with engines generating around 735 Kilowatts of power continued her Westward journey. Her progress was uninterrupted by any obvious manoeuvre according to AIS and radar coverage of the Pentland Firth that day, to wait until a period of five hours and thirty minutes after high water. By then, the power of this tidal race would have diminished and according to the Admiralty Pilot, 'the South West end of the race becomes detached from Men of Mey Rocks leaving a clear passage'.

10.4 Radar coverage of the Pentland Firth is maintained by Orkney Islands Council Vessel Traffic Services, which controls traffic entering the channels among the islands in the group to the North of the Firth. Recordings of that coverage from the day were obtained by MAIB and extracts from Production

Number 27d (zoomed out accident fast) and 27b (zoomed in fast) were shown to Captain Pritchard during his evidence.

11.1 Aided by Captain Pritchard's interpretation of the images, the *Cemfjord*, identified both by its radar return and AIS transponder can be observed on course through the Outer Sound between the islands of Stroma to the South (its port side), and Swona to the North (its starboard side). Always present on this footage, appearing frequently but intermittently, were radar returns from easterly moving waves driven against the ebbing tide by the Westerly winds. The larger waves, shown on these recordings as being a darker shade of green, were of a magnitude that the radar interpreted as vessels.

11.2 In the moments before the *Cemfjord's* radar signature disappeared from view at 1316 hours, larger wave movements can be seen directly ahead of her bow.

11.3 Captain Pritchard's endeavours to interpret the vessel's movements during the final minutes of her voyage were also reliant on its AIS transmissions, which he represents in tabular form within table 2 of his report at page 46. This shows that in the last ten minutes before she capsized, her speed over the ground had decreased from 9.7 knots at 13.05 hours to 6.3 knots at 13.15 hours.

11.4 It is submitted that the significance of this cannot be underestimated. During that period, he estimated that the *Cemfjord* was moving in a westbound tidal stream that was itself moving at around 6 knots. If that was the case and the *Cemfjord* was moving at 6.3 knots (her recorded speed at 13.15 hours, one minute before her capsize), that would have reduced her speed through the water to much less than one knot. In this situation, the consequence of that was a reduced flow of water over her rudder, situated behind the propeller, resulting in loss of steerage and a difficulty in controlling its heading, effectively putting her at the mercy of the oncoming seas.

11.5 His assessment is that in these circumstances, she turned to port, presenting her starboard side to 'extraordinarily violent sea conditions created by the gale force winds opposing a strong ebb tidal stream', (section 3.1 of his report, page 95) when the strength of the ebbing tide would have been at its zenith.

11.6 It was in these conditions that she capsized, most probably to port in Captain Pritchard's assessment, as the Emergency Position Indicating Radio Beacon (EPIRB), mounted on her port side bridge wing, failed to deploy and automatically commence transmissions on a distress signal on a dedicated frequency monitored by MCA.

12.1 An indication of the volume, and by extension, weight of water which either overwhelmed her or was encountered prior to her capsize, can be gained from the photograph which is Production Number 26J. This shows that the *Cemfjord's* foremast, upright when she departed Rordal in Denmark where her voyage commenced, has been distorted by being bent rearwards to an angle of almost forty-five degrees.

12.2 The *Cemfjord's* loss was unobserved from the shoreline. Her size did not require the carriage of a voyage recorder akin to the 'black boxes' installed on aircraft. There are no survivors to give an account of her last moments. There is no evidence available to the Inquiry that gives any insight into any decision-making processes on board and who on board made them during this critical segment of the *Cemfjord's* final voyage. It is wholly from an analysis of the radar and AIS data that Captain Pritchard arrives at his unchallenged conclusions.

12.3 It is submitted, therefore, that deferring the entry to the Outer Sound until the tidal conditions were more favourable to a westbound transit was a precaution that could reasonably have been taken. Had that precaution indeed been taken, while no evidence was heard by the Inquiry to determine when the strengths of the wind may have abated, at the very least, the tidal conditions would have been less adverse. The *Cemfjord's* speed through the water could have been maintained to the extent whereby the flow of water over her rudder would have enabled her bridge team to control their vessel's course and heading. This more favourable set of circumstances may well have resulted in the accident, namely her capsize with the consequent deaths of all those on board, being avoided."

[116] In closing his submissions, Mr Glancy extended the Crown's condolences to the families of the officers and crew of the *Cemfjord*.

Submissions on behalf of Partenreederi MS "Baltic Sun", Brise Bereederungs GmbH & Co KG and Baltrader Schiffahrsgesellschaft mbH & Co KG

[117] Mr B Smith KC lodged written submissions on behalf of Brise. He formally adopted the submissions made on behalf of the Crown and did not propose any additional findings. He also took the opportunity to express the condolences of his

clients to the family and friends of the officers and crew of the *Cemfjord*, describing her loss as "a maritime tragedy of a magnitude uncommon in modern times."

Submissions on behalf of the Maritime and Coastguard Agency

[118] Mr P Gray KC lodged written submissions on behalf of the MCA. He formally adopted the submissions made on behalf of the Crown and did not propose any additional findings. He also took the opportunity to express the deepest sympathies of the MCA to the family and friends of the officers and crew of the *Cemfjord.*

Submissions on behalf of the Republic of Cyrus

[119] Mr Smith lodged written submissions of behalf of the Republic of Cyprus. He formally adopted the submissions made on behalf of the Crown and did not propose any additional findings. He also took the opportunity to express the deepest sympathies of the Republic of Cyprus to the families of the officers and crew of the *Cemfjord*.

Discussions and conclusion

[120] As I would anticipate, Crown production 30, the MAIB Report, and Production 31, containing the Annexes to that report, record the results of the very detailed and comprehensive investigation carried out by Captain Pritchard and his colleagues into the sinking of the *Cemfjord*. In the course of that investigation Captain Pritchard has very properly considered any learning points for the future which have become apparent in the course of his investigations and has equally properly made

certain assumptions and engaged in a degree of professional speculation to seek to establish why certain actions were taken. From the wider purpose of a safety investigation, which the MAIB is required by statute to carry out, that is entirely proper. However, it is important to bear in mind that I have a subtly different statutory function to carry out, as described in paragraph [1] to [3] above.

[121] I cannot engage in speculation and matters which did not contribute to the deaths under investigation in the Inquiry or the accident leading to those death are beyond the remit of this Inquiry. For instance, Captain Pritchard very properly examines as an issue of potential interest the waiver issued by Cyprus to Brise to operate *Cemfjord* for a defined period with temporary bilge pumps. Now, that is a matter of interest to the MAIB, Brise and Cyrus and the responses to the MAIB recommendations are of interest to them. However, the bilge pumps had nothing to do with why the *Cemfjord* sank and are therefore not relevant to this Inquiry. A number of similar matters were, understandably, touched on in the evidence but I do not consider it to be either necessary or appropriate for me to make findings in fact in regard to them. Hopefully that explanation will set this Determination in context. The Determination does not, and in my view cannot, deal with all the matters highlighted in the MAIB report. The MAIB report itself is publically available on the MAIB website at no cost. It is there to be read and considered by anyone interested in the wider lessons to be learned from this tragedy.

[122] Mr Glancy has provided a helpful analysis of the evidence, quoted in full at paragraph [115] above. Having reviewed my notes of the evidence, the statements and productions lodged I am in agreement with his overall assessment.

[123] It is clear from the evidence that the sea and weather conditions in the Pentland Firth around 13.00 hours on 2 January 2015 posed a severe hazard to any vessel seeking to transit the area, particularly from east to west, as the *Cemfjord* sought to do. The elements caused the sudden catastrophic capsize of the vessel, the suddenness of that event tragically resulting in inevitably fatal consequences for her officers and crew.

[124] It is not possible to state why the vessel was attempting to transit the Firth at that time. It is equally clear from the evidence that the dangers of the Pentland Firth are well recognised and well known within the maritime community. Pawel Chruscinski was a very experienced master, used both to the *Cemfjord* and the Pentland Firth. He had shown a willingness to alter the voyage of the vessel to take account of tidal conditions before. The other deck officer, Jaroslaw Orlow, was new to the Cemfjord, but was a very experienced mariner. Sadly, the reason or reasons for continuing her voyage on 2 January 2015 were lost with the ship and her crew.

[125] In closing this Determination, may I join with Mr Glancy, Mr Smith KC, Mr Gray KC and Mr Smith in expressing my condolences to the families and friends of Pawel Chruscinski, Jaroslaw Orlow, Roman Tamas, Jerome Narvasa, Henryk Dubanowski, Tomasz Kwiatkowski, Artur Wegorek and Artur Podrazka. Their loss is no doubt still keenly felt. The tragic deaths of the *Cemfjord's* officers and crew are

a reminder that even in the 21st century, with all of humanity's technological achievements, there are still considerable risks faced by those who labour on the sea.