INQUESTS INTO THE DEATHS OF YVES MARIE GLOAGUEN AND PASCAL LE FLOCH ARISING FROM THE LOSS OF THE VESSEL BUGALED BREIZH ON 15 JANUARY 2004

SUMMING UP AND FINDINGS OF JUDGE LICKLEY QC

Overview

1. This summing up should be read in conjunction with four important documents that are annexed. First a glossary of key terms, second a glossary of technical terms, third a chronology of events on 15/1/04 and fourth, a chronology of the procedural events that took place thereafter. As a consequence, I need not repeat the explanations of terms herein nor refer to all events. I will therefore refer to the key events only.

2. At around 12.30 on the 15/1/04 some 17 years and nine months ago the French trawler *Bugaled Breizh* sank within a few minutes and all five lives on board were lost. The crew drowned. The evidence which the court has heard has illustrated the dangers faced daily by fishermen of all nationalities in their demanding work fishing in the English Channel. The court has also heard of the skill, expertise, courage and determination of those involved in the search and rescue services. Finally, it is a measure of those who go to sea that when there is an emergency they respond and assist in the hope of saving the life of a fellow seafarer.

3. Therefore, who, when, where and how – the key questions I have to answer in law can be answered. Those facts have been known to everyone concerned since that day. That said, the families of those who died deserve to know what happened. Their sense of loss is ongoing and their determination to find answers is to be commended. There is, in addition, a wider public interest in determining the facts. I do not propose setting out, in full, the reasons for the delays other than a short summary later in this decision. The reasons are known.

4. Following an earlier PIR hearing in 2021 on 12/3/21, I made a number of case management decisions that should be understood at this stage. They concerned the nature and extent of these inquests, where the evidence would go and where it would not, and the scope, that is the issues, under consideration. Directions were published subsequently dated 25/3/21. In summary I decided:

   (i) Not to hear these inquests with a jury. That was so I can provide a fully reasoned decision based on the evidence available to me in 2021.

   (ii) There was no basis for attempting to recreate or reinvestigate the circumstances of the sinking and re-doing the work of a specialist marine investigation branch. The BEAmer report from 2007 and the conclusions were accordingly to be given considerable weight. Capt. Soomro was to give evidence and be questioned about the findings and conclusions and his own assessment of that report as set out in his own report of 5/7/19. I stated that it will be for me to determine whether the BEAmer report is in fact incomplete, flawed or deficient.

   (iii) Experts. To avoid multiple witnesses giving evidence, I directed that questions be prepared by the interested persons, in particular the families, based on the expert reports used in the French proceedings and Capt. Soomro would respond to the questions posed. That has been done. He has prepared and submitted two supplementary reports.

   (iv) I decided that the inquests would involve a rehearing of the evidence heard by Mr Cox in November 2019. That was because only by calling evidence and allowing evidence to be tested will it be possible to reach a proper final decision on the cause of the sinking. I stated that a rehearing of the evidence heard by Mr Cox and the hearing of the further relevant evidence was necessary to ensure the wider public confidence in the process and the findings that are ultimately made. It is equally important to note that the families are now engaged once again and they must be able to have confidence in the inquiry that I undertook.

(v) The scope of inquiry for the inquest was set at a hearing in November 2017. I decided to maintain the same issues. The scope of the inquests therefore covers the following topics:

(a) The background to the casualty: the vessel; the crew and their experience; and movements of the vessel in the days before the sinking.

(b) The events of 15/01/04 prior to the sinking, to include: the position and movements of the vessel; and communications between the vessel and the *Eridan* (another fishing vessel in the vicinity).

(c) The search and rescue operation: communications between official bodies; the vessels and helicopters involved in the rescue effort; the timeline of the rescue effort; the discovery of life raft or rafts; the discovery of the bodies in the sea; and efforts at resuscitation.

(d) The cause of death of each of the deceased: pathology and toxicology.

(e) The findings of the investigations into the casualty, including, in particular, the findings of BEAmer and those made in the course of the French criminal proceedings.

(f) The cause of the sinking of the vessel: what can be determined based on physical evidence; what are possible and likely causes of the casualty in the circumstances.

(g) Evidence as to whether there were other vessels in the area which could have been involved in a collision with the vessel (submarines and surface vessels).

5. I am satisfied this process has, in a proportionate and fair way, addressed the key issues set out above. Evidence has been adduced that has not been heard in public before and, subject to one or two exceptions, all witnesses were available to be cross examined and challenged. Evidence was called live in person in court, by live video link or was read

pursuant to The Coroners (Inquests) Rules 2013 rule 23 without objection. In one case the evidence was read pursuant to Rule 23(3) the witness having died. In that case the evidence was clearly relevant. It was not possible to cross examine the witness on behalf of the families. That restriction is noted and taken into account.

6. Great care has been taken to prepare the bundles of documents and in adducing the evidence by skilled advocates. I am grateful to the families for engaging in this process and being represented by counsel. Their involvement and participation is of considerable benefit to this entire process.

7. The effect of the widened scope of the inquests means I have been tasked to expand the '*how'* question and determine what caused the *Bugaled Breizh* to sink so suddenly and dramatically with an experienced skipper and crew. The answer to that question has been the subject of much debate and speculation over the years. I have to determine where the evidence takes me as a fact finder. What does the evidence show or not show to the required standard of proof, namely, what is more likely on the balance of probabilities? As in all cases there may be occasions when there is no evidence on a point.

The men who died

8. On the 15/1/04 five men, M Yves Gloaguen, M Pascal le Floch, M Georges Lemetayer, M Eric Guillamet and M Patrick Gloaguen, the crew of the *Bugaled Breizh,* were working making a living in the harsh and demanding environment of trawler fishing and lost their lives. I am principally concerned with Mr Yves Gloaguen and Mr Pascal le Floch who were recovered to the UK, hence the need to hold these inquests.

The medical evidence

9. Medical evidence as to the identification of the casualties and the causes of death.

    (i) Pascal le Floch

    Pascal le Floch was born on the 1/3/54 and was 49 when he died. He was identified on the 16/1/04 by Mr William Farrell who knew him well. Mr Farrell had last seen Mr le Floch on the 12/1/04 when the vessel was docked in Newlyn

because of the bad weather. A post-mortem examination was conducted by Dr. R Marshall on 19/1/04. He gave drowning as the cause of death. He said '*there was congestion throughout the airways and they were intensely congested and very oedematous. Appearances were typical of drowning'.* He described Mr le Floch as '*a well built Caucasian male height 177 cms weight 79 kgs'.* A second post-mortem conducted by the Home Office Pathologist Dr. Fernando resulted in the same conclusion as to the cause of death. He added that Mr le Floch had no natural disease. From the description of the limited clothing, it can de determined that Mr le Floch was the first casualty recovered by the Search and Rescue (SAR) helicopter. A toxicology report concluded that no alcohol or drugs were detected on examination of blood or urine samples.

(ii) Yves Marie Gloaguen

Yves Marie Gloaguen was born on the 10/11/59 and was 44 when he died. He was identified by Madame Christelle Le Berre who had been his partner for 16 years on 18/1/04. A post-mortem examination was conducted by Dr. R Marshall on 19/1/04. He gave drowning as the cause of death. He said '*there was congestion throughout the airways with a little frothy fluid in some bronchi together with mucus. The lungs appeared over inflated and were very congested and oedematous. Appearances typical of drowning'*. He described Mr Gloaguen as '*a well-nourished Caucasian male, height 177cm, weight 99kg'.* A second post-mortem conducted by the Home Office Pathologist Dr. Fernando on 21/1/04 resulted in the same conclusion as to the cause of death. He added that Mr. Gloaguen had no natural disease. A toxicology report concluded that no alcohol or drugs were detected on examination of blood or urine samples.

The facts in outline

10. At the time of the sinking at approximately 12.30hrs UK time the *Bugaled Breizh* was approximately 15nm (nautical miles) south of Lizard Point, Cornwall. The crew were fishing at the time, with the trawl net extended backwards and running along the seabed. The crew, having let out the nets, most probably would have had a meal and, as was their practice, rested afterwards. The bridge would have been manned. To take their break they would have removed their outer clothing and rested in the crew quarters. They would have expected, after three hours or so, to haul the nets, remove the captured

fish, pack them in ice and, if the conditions were favourable, fish again. The weather at the time was suitable for fishing but not calm. Witnesses described the conditions at the time with winds gusting up to 45-50mph and sea states of 4-5.

The evidence

11. I have heard the following evidence. This is of course a summary, in parts, of the key points. I stress I have taken into account all of the evidence and the submissions made by the parties. I have taken into consideration that the events were more than 17 years ago and memories and recollections can fade and change with time. Many of the witnesses made statements nearer to the events and refreshing their memories will have helped to some extent. I have made appropriate allowances for these factors.

The *Bugaled Breizh*:

12. There is no suggestion the *Bugaled Breizh* was defective in any way, unsafe or unlicensed. The evidence supports the suggestion that no mechanical fault played any part in the sinking of the *Bugaled Breizh*. The crew were all experienced and competent. They all had worked in the same area before and knew their respective jobs and responsibilities. The evidence does not support any contention that human error was the reason the *Bugaled Breizh* sank. I add for completeness, for the avoidance of any doubt, that the *Bugaled Breizh* was entitled to be fishing where she was on the day in question. I will turn to the technical details later.

The crew of the *Eridan*:

13. The *Eridan* was another fishing vessel from Brittany. She had left Brittany on the 7/1/04 with the *Bugaled Breizh* for what was expected to be a fishing trip of about 2 weeks. Her crew were all experienced fishermen, familiar with the fishing ground south of Cornwall (the area), and in particular, the scene of the incident some 15 nm south of Lizard Point. They had fished with the *Bugaled Breizh* on occasions before. On the 11/1/04 both boats put into Newlyn due to bad weather. They recommenced fishing on the 13/1/04. On the 15/1/04 both boats were at sea fishing. They were a few miles apart, however, they were in line of sight and could see each other. The crew gave evidence via interpreters with one or two having a better knowledge of English. Both vessels

were registered at Loctudy near to Concarneau Brittany. All confirmed they had made statements to the police investigating the loss of the *Bugaled Breizh*.

(i) Serge Cossec – Captain of the *Eridan*.

He said they departed France on the 7/1/04 and were planning to return on the 15th day i.e. on or about the 21/1/04. He said he had a crew of five sailors and that they often fished in the area concerned. He said the area was not dangerous. He confirmed the map showed the area they fished and that they fished with the *Bugaled Breizh* quite often and he knew the crew (I/A.2). He said they fished in the area until the 11/1/04 and the conditions were favourable. He confirmed that he had described the weather on the 11/1/04 as '*atrocious'* in his witness statement. He said they had a warning that a storm was brewing and so they put into Newlyn for shelter. They went back to fishing in the area on the 13/1/04. He said the weather was more favourable and it was a force 5 or 6 wind. On the 15/1/04 they were fishing in the area south of Lizard Point. He said he saw a helicopter flying low around their vessel at one point. He said it had ball underneath it, a light projector at the front and was grey in colour. At 11.30 (French time) they had been fishing for 3 hours and hauled their nets. He could see through the binoculars the *Bugaled Breizh* to the south, about 3 or 4 miles away. Their position was 49 45 N and 05 14 W. He confirmed the Images bundle shows the positions (I/A.12). He spoke to the Captain of the *Bugaled Breizh* at 12.00 and they chatted. The *Bugaled Breizh* was doing nothing special is how he described the conversation. Both boats carried on fishing. The plan was to fish as before for about 3 to 3.5 hours towards the south. The *Bugaled Breizh* had reported that it would fish to the South East. The wind was from the South West force 4-5 with a swell of 2-3m. It was overcast but not raining. While the nets were out, the crew of the *Eridan* had a meal and then rested. It appears the crew of the *Bugaled Breizh* adopted a similar pattern of working.

Mr Cossec then heard from the *Bugaled Breizh* at 13.25 (French time being 12.25 UK time. He was called by the captain Yves Gloaguen who said, '*Come quickly we are capsizing'* Mr Cossec said it was said '*several times'* and Mr Cossec said to him *'what's going on?'* and he repeated the same thing. He said

it was not the same as usual he was wondering what had happened to him. He confirmed that at that moment he could not hear any noise in the background. The weather conditions were good as it was in the morning, he said.

He said he tried to call him back and '*he said he was still capsizing and I asked for his position.* He gave M Cossec 49 42N and 5 10W. M Cossec said he thought M Gloaguen was done for as there was panic in his voice. M Cossec explained that he told M Gloaguen to *'cast off his life buoys (*clarified to mean life rafts*) because something abnormal was happening'.* He said that a life raft can take eight people and that is what he told M Gloaguen to launch. He said M Gloaguen did not reply.

Mr Cossec roused his crew telling them to haul their net. He said '*I grabbed hold of the hand set and I could…hear…some noises (*as he put it *crackling* sounds*)'*. He said he did not hear an alarm sounding on the *Bugaled Breizh* during those calls.

He then effected a Mayday call by pushing the red button on the Inmarsat C device to initiate a mayday and called Cross Gris-Nez to report the incident. He said that he spoke to his first mate and he had not seen anything on the radar. They set off at 13.30 - 13.45 and it took 30-40 minutes to arrive at the location sailing south west. He said he heard a call from the UK Coastguard to the *Bugaled Breizh*. His first mate corrected the position to the Coastguard. He said that he saw *'one helicopter in the east...the helicopter was very far'.* He thought it was grey in colour but was not sure. He received a call from the owner of the *Bugaled Breizh* and said on route they did not see any boats. They arrived at the location at 14.15. He saw some objects and an oil slick. The position was 49 42 34 N and 5 10 37 W. He said the wind was force 5-6. They did not see anyone in the water. He said using the sonar and radar they could see the *Bugaled Breizh* on the seabed and two columns of diesel coming up to the surface. He said he saw very large bubbles in the water. They stayed looking and searching moving to the north east but did not find any survivors. He noted the *Silver Dawn,* a British fishing boat that had joined the search as well as two helicopters; one red and grey in colour the other yellow, although he thought he might have seen

the yellow helicopter later. He said they found a life raft that was fully inflated. There was no one inside. It was orange and black with a grey line. He then said it had a black base with a red top. When asked to clarify the colour as he said it was '*more orange than…red'*. On the way back to the area he said they found another life raft. He could not say what the time was between the two findings. The second raft was not intact and it was lighter in colour than the first. He said they headed back to the *Bugaled Breizh*. The helicopter was in view, however, he did not see a diver being lowered but another crew member did. They found the distress beacon from the *Bugaled Breizh* about 0.3 to 0.4 miles from the wreck. They also collected two life rings from the water. Over the radio they heard that bodies had been recovered.

He said he saw some cargo ships and a submarine. The submarine was sighted in the afternoon not when they arrived. He said the tower was above the water when he saw it. It was moving north. He said they had a view of it for about 30 minutes. He said when they went next to it the submarine moved away. He later said he did not know if the submarine was evading his boat or not. He saw other vessels in the area: cargo ships, a fishing boat and a rescue boat. It was by then 16.00hrs. By that time the weather had deteriorated with the wind picking up to force 7-8 and it was raining. The waves were 3-4m. Despite that, they carried on searching until they were stood down at 18.00hrs. They remained in the area until 19.00hrs and then resumed fishing. The next day they searched again as did others, without finding anything or anyone. He said he had never snagged his net in the area, although he had snagged nets before. When that happens he said you have to release, get rid of the nets and determine if there is any resistance (by which he meant the net was pulling). He rejected a suggestion that in such a situation you would wait for 12 hours before moving.

(ii) Marc Cariou - Second mechanic

He had been a fisherman for 13-14 years. He was familiar with fishing in the English Channel and with the *Bugaled Breizh*. His evidence was in accordance with that of Mr Cossec. On the 15/1/04 when he was on the bridge smoking a cigarette he saw a helicopter at 10.30 (French time), they were fishing at the

time. It was grey in colour with a large bubble underneath. He saw it go from their starboard side to the left. The crew ate at 12.00 (French time) and then rested. He was woken at 13.30 (French time) by Mr Cossec who told them to get the net in because the *Bugaled Breizh* was going down. He put on his fishing clothes and the crew hauled the net. That took 10-15 minutes. When that was done they set off to the location given. It took them 30-40 minutes to arrive. He saw a very big oil slick measuring 300-400m and perhaps more. He could not see any survivors or bodies. He saw the distress beacon and an orange life raft. They could see there was no one inside. It was fully inflated, had a roof, the base was black and the sides were open. Later, he saw a second life raft that was red in colour, inflated but not fully. There was no one on board. He said it was impossible for it to be the same one as the first life raft that he saw, as it was not the same colour.

He saw the submarine, the tower was out of the water. It was 300-400m away. It was moving. He said '*it moved across our path'*. He said he saw it when it was not far from the oil slick and was 300-400m away. He said he saw 3 or 4 helicopters. One lowered a diver. He said the weather was quite bad with a long swell and small waves.

(iii) Frédéric Stephan – First Mate

He had been a crew member since April 2003. He too was familiar with fishing in the area concerned, along with the *Bugaled Breizh*. On 15/1/04 at 13.25 (French time) Mr Cossec said '*come quickly'* and called Mr Stephen and his crew mates to come quickly and '*to haul up the net so that they could go to help'*. He said there was good visibility and a good sea state. He heard Mr Cossec make a second call to the *Bugaled Breizh* but there was no response only '*scratching'* noise on the VHF. He confirmed the position of the *Bugaled Breizh* as 49 42 N and 05 10 W. At the time of the calls they were about 5 or 6 miles north from the scene. At some point he corrected the position of the *Bugaled Breizh* as it had been noted incorrectly by the Coastguard in Falmouth. He released the distress beacon. He contacted CROSS Gris-Nez and told them of the emergency. He said CROSS Gris-Nez had received the *Eridan's* distress

signal. He saw one helicopter which he thought was yellow or fluorescent green in colour as they sailed to the area. When they arrived at the scene he saw a big oil slick, wood, bottles, metal, and another object. He said they found two life rafts. The first was orange, fully inflated, with a roof and a black base. A few minutes later they found a second raft that was open. It was black with an inscription on the side in English. That was also fully inflated. He said it was not the same as the first one he saw because of the difference in colour and the second raft did not have a roof. While searching he saw other boats: 2 cargo ships, a rescue ship and helicopters. One helicopter was yellow and the other was grey and red.

He also saw the submarine. It was near the oil slick. It was 1 mile or half a mile away. The tower was out of the water and it was moving north. The submarine was parallel to them and then crossed their path. He said they did not get close and the submarine stayed away from them. He thought they saw it after about an hour. It was not seen when they first arrived but later. It was travelling at between 10-15 knots. He did not know where it went and it was on the scene for about half an hour.

(iv) Andre Firmin – Engineer

He had been fishing on the *Eridan* for 15 years at the time. He had the same fishing experience as the other crew members. On 15/1/04, while he was resting, M Cossec came to the crews' quarters and said there was a problem. He told them to hurry up and to get the net in as soon as possible. He was detained working with the fish, as he put it, as the *Eridan* went to the scene. My understanding is that when hauling the nets there would be some catch that needed attention and freezing etc. Having done that for about 20 minutes he went to the bridge. He too saw the oil slick, a life raft that was red, had a roof, had openings and was fully inflated and a grey helicopter. He said that the sea was choppy with force 5-6 winds and waves of 2-3m. He signalled with crossed arms to one helicopter that there was no person in the life raft. He saw a diver from the red helicopter and another helicopter, coloured grey and yellow and went to the area of the oil slick. On the sonar he saw columns of oil which he

thought was where the *Bugaled Breizh* had gone down. They followed the tide looking for survivors. He saw a second life raft about 20-30 minutes after the first, it was red and lighter in colour than the first. It was not fully inflated. He did not think it was the first one they had seen. He was aware a diver would cut the raft to avoid confusion. The second raft had one opening but the first had two. He saw the submarine. The tower was out of the water when he saw it. He said it was travelling parallel to and faster than the *Eridan*. At a point it crossed their path. He thought it was 300-400m from the *Eridan*.

(v) Thierry Spagnol (Read evidence Rule 23 statement dated 5/7/05)

His original evidence was taken on the 2/5/05. He was the final member of the *Eridan* crew I heard from. He recalled Mr Cossec telling the crew the *Bugaled Breizh* was capsizing and the crew pulling in their fishing equipment and setting course to the *Bugaled Breizh*. He said it took them 30 minutes to get to the position. He scanned the water and saw wooden planks floating and a sheet of surface fuel on the water. They saw an empty round orange life raft with a black base, two openings that you could see through and a roof. He said it looked *'normal'*. They found an orange '*corona buoy'* marked *Bugaled*. They also found another life raft, this time not inflated, with a flattened roof which was red in colour. He said apart from the colour he did not see much difference between the two rafts. He was adamant they had not changed course between the discoveries of the two life rafts. They recovered the beacon. He saw the submarine. He said it was in front of them during the search. He said the submarine appeared on their starboard side and moved away as they approached. He saw a grey helicopter in the morning with a large ball underneath it and during the search a red and then a yellow helicopter. He saw a diver descend from the red helicopter.

On the 1/6/05 he made a further statement and added that the crew of the *Eridan* had signalled to the helicopter that there was no-one in the life raft.

Finally, on the 5/7/05 he gave further evidence and added that he had seen the boat the *Silver Dawn* from England and boats from Brittany. He said he saw the

submarine surfacing and moving away as they approached. He then said that one of the helicopters was yellow and blue and the other was red.

Others at sea and related evidence:

14. Other evidence was adduced from those who were at sea and who went to assist with the search and rescue operation;

(i) Eric Gueguiniat (Read evidence rule 23 statement dated 23/1/04)
I add that the statement is a translation from French to English and some precision in meaning might be lost.

Mr Gueguiniat had been a member of the crew of the *Bugaled Breizh*. He last sailed as a crew member in November 2003. He knew those who died on the 15/1/04. He said the area where the vessel was lost was well known to the crew because they frequented it regularly. He did not remember a specific incident but the crew did feel hard knocks that he said were the otter boards making contact with hard rocks. Sometimes it was the chain in front of the trawl that was banging and sometimes breaking. He said the noise and the '*purr of the engine'* made him realise there was an abnormal force. He described the vessel having 'pull sensors' that would indicate tension levels of 7 to 9 tonnes. He described winch brakes being released automatically but said that the tension on the warps would be significant before the winch brakes release. He said the bridge was never left unmanned. He described the crew areas. He said the alarms were on the bridge were both luminous and audible. He had heard the alarm for the fish hold when ice had melted but not for the engine room. He said the vessel was very well maintained and the mechanic highly skilled. Maintenance was regularly undertaken, and parts immediately replaced. He said the access doors to the cabin and saloon were open but the cabin door was closed when the net was turned. The door to the machine room was closed to muffle the noise. He said there were two life rafts. The VHF radio was set for channel 72 and a private channel to use with other fisherman, P.3. Channel 16 was automatic. There were two radars set at 12 and 4 miles. There was a sounder and two plotters.

The witness said the crew would eat at noon and would then rest taking off their outer clothing to do so. That explains why the victims were dressed as they were at 12.30 (UK time) on the day of the incident.

(ii) Cyril Blandin (Read evidence Rule 23 statement dated 20/1/04)

He was the skipper of the trawler '*Hermine'* and responded to the emergency. He had been fishing in the morning of the 15/1/04 and decided at 11.00hrs to move to the south west to fish there. He said the winds were 60km/hr from the south west. The sea was '*a little agitated'* but without risk to his trawler. He heard of the incident when talking to the skipper of another fishing boat. He carried on his way and saw four echoes on his radar. They were 2 coasters, a submarine and a trawler the *Eridan*. He saw a helicopter and with his crew began to search. He saw a partly deflated life raft and recovered it to his boat. It did not have any apparent damage. He said he fished 80% of his time in the sector and had not encountered any problems. He said '*the sea is not dangerous'*. No wrecks were indicated in the area. He said one of his crew took a photograph of the submarine. I have asked to see that photograph. It does not appear to have survived to be seen.

(iii) Jean-Yves Tembuyser – Judicial Police Officer (Read evidence Rule 23 statement dated 20/1/04)

The officer was carrying out investigations into the sinking of the *Bugaled Breizh* acting under the orders of the public prosecutor in Quimper. The recovered life raft was retained and examined on 20/1/04 on the quay in Roscoff, France. Mr Blandin was present. The Bombard type life raft was placed on the floor of a hanger. It was partially deflated. It bore the inscription *Bugaled Breizh*. The capacity was noted to be '*8 persons'*. An identification card was found on the outside with serial numbers showing manufacture in 1988. All survival equipment was inside the raft including: oars, a lamp, survival rations and other equipment such as rockets and water. The identification card was present in a tube and bore the date of the last verification carried out in May 2003, the technician being named as Cossec. Photographs

were taken. They appear in the pages following his statement (S/19/A126a-m). The slash mark caused by Mr Hall is photographed (S/19/A.56). The photographs of other items recovered are the beacon and the recovered safety rings (S/19/A126n-o and S/19/A126p).

(iv) Anthony Hosking – *The Silver Dawn*

Mr Hosking is the owner and director of the Silver Dawn Fishing Company. The company runs the *Silver Dawn* fishing boat. He was at sea and on board the *Silver Dawn* at the time of the incident and went to assist. The *Silver Dawn* was engaged in a different type of fishing to the *Bugaled Breizh*. It was used for wreck fishing where a net is lowered and recovered after about 12 hours. On the 15/1/04 there were 4 or 5 crew members. Mr Thomas was the Skipper. They were fishing about 25 miles SE of Lizard Point.

He said that morning, via the Navtex system, which is available to all ships, he had been informed that a NATO exercise was taking place that day in the area where they were fishing. He had no information as to whether it was surface vessels, underwater vessels or both. He was not aware it was continuing the next day. He thought they might see the vessels involved and when responding to the mayday alert, all he would do would be to navigate as normal and to avoid collisions.

At around lunchtime they received a mayday alert from Falmouth Coastguard on the emergency VHF channel 16. They were able to proceed immediately. They were given a location and told the incident involved a French trawler. He thought they were 45 minutes to an hour away from the scene. At maximum speed being 8 knots it would take one hour to arrive. They were 6-7 miles to the SW and gave their position as 49. 34. 9 N 5.17. 1 W. He plotted that position with the help of counsel on p.12 of the images bundle (I/A.12). The crew put on life jackets and stood on the shelter deck and positioned themselves to get the best view as he said '*to see every angle'*. He recalled the weather was '*quite rough. It was a typical … day for the time of year'* with SW gale force winds

with gusts up to 50 knots but because it was a neap tide the swell '*wasn't horrendous'*.

He was referred to a signal from HMS Tyne dated 19/1/04 referring to the *Silver Dawn* joining the search at 13.11hrs (D/10/A289). He accepted that must have been the time they set off. He noted the call sign for the *Silver Dawn* was not correctly noted. He thought they were one of the first vessels to respond and set off in search. Later he was asked about other records of the communications that day.

As they sailed to the scene he said they spotted a 'target' on the radar (meaning another vessel). The *Silver Dawn* had no capability to see under the sea surface, unless immediately below the *Silver Dawn*, but did have radar. That meant the vessel that transpired to be the Royal Netherlands Navy Submarine HNLMS Dolfijn (the Dolfijn) was on the surface at the time and not submerged. He thought it was about 2 to 2.5 miles away at that point. The *Silver Dawn* and the Dolfijn were sailing north at the time. The *Silver Dawn* identified the submarine using binoculars at a distance of 1.2 miles and communicated by VHF radio. The submarine identified itself and said he was going to the same distress call He said he saw submarine on the surface with the tower out of the water and it was moving. The two crews then discussed safe distances while searching the area. At the closest, the *Silver Dawn* and the Dolfijn were 0.9 miles apart. The two vessels took part in the search. The submarine was to his east or starboard quarter going north or north west. The two vessels kept apart as part of the search. He recalled seeing the MV Autotransporter and later the Penlee lifeboat. There were other vessels in the vicinity.

He accepted they were in contact with Falmouth Coastguard using a different channel after the initial response as was normal. The Coastguard log shows the first entry for the *Silver Dawn* at 13.08hrs (D/12/A.399). At 13.10 the *Silver Dawn* reported making contact with the Dolfijn. At 13.34hrs the estimated time of arrival at the scene of the *Silver Dawn* was said to be in *'18 mins'*. At 14.14hrs the note reported the *Silver Dawn* would be on scene in 5 minutes, so by 14.19. Mr Hosking said '*ok'.* The records show that the sighting of the submarine was

1 hr 9mins before the *Silver Dawn* arrived at the datum point. Mr Hosking said '*that would appear to be correct. My lasting memory from memory was he was a little closer'*. He was asked about a message noted on 29/7/04 referring to a conversation between the *Silver Dawn* and the submarine at 13.10hrs on the 15/1/04 (Supp 3/58/A.1184). He said there were two or three conversations with the submarine. He agreed the reference to being 6-7 miles SSW of the scene was correct when they received the Mayday call. He agreed that the reference to the submarine about 1.2 miles to the east and requesting a CPA (closest point of approach) of 1000 yards was as he recalled it. He did not recall any mention of an array being towed. In another report from HMS Tyne he said he did not see a vessel capsizing as the report suggested (Supp 3/42/A.1092).

It is clear to me that the records show the time the *Silver Dawn* arrived which, with the passage of time, was not how Mr Hosking remembered the timings. That is perfectly understandable in the circumstances. He had not seen the Falmouth MRCC records before he was questioned.

He was shown the Falmouth Coastguard log and confirmed the *Silver Dawn*'s arrival at the scene at 13.45hrs (D/12A.399). They recovered a length of mooring line that was taken to Newlyn. The Harbour Master was informed, in case it was of evidential value. During the search either Falmouth MRCC or HMS Tyne gave them directions. Eventually the *Silver Dawn* had to discontinue the search because there was only a certain amount of time they could stay out and they had to go back to their nets that had been left out.

He was asked about his witness statement where he previously said he saw the submarine surface (S/17/A.109). He said he did not see that. When he saw the submarine it was on the surface. As for his experience fishing in the area he said he fished wrecks with a static net and did not trawl in the area. He said a trawler skipper who worked the area would have a better knowledge than he would. He said there were no large obstructions on the seabed to his knowledge.

Finally, he said snags can occur if you pull a net along the seabed. He added the French trawlers would have a very accurate knowledge of the seabed and will avoid snags that can tear a net. When a trawler snags a net it is more complicated because they are moving.

The Search and rescue operation: MRCC Falmouth, helicopter crews and others:

15. A number of witnesses were called:

(i) Simon Rabett – District Operations Manager MRCC Falmouth

In January 2004 he was the District Operations Manager for Falmouth Coastguard known as MRCC (Maritime Rescue Coordination centre) based at Pendennis point. He said he started his job not long before the incident and he retired in November 2008. Before he took up his post he was part of the operations team at Falmouth MRCC and he was very experienced in SAR.

On the day, he was in charge of the MRCC and had to run the station such that it was able at any time to fulfil its role of co-ordinating civil maritime SAR. He said that the centre had a range of means of communicating with vessels and others. They had state of the art maritime communications and could communicate with ships, aircraft and any other vessel in the area using VHF, medium frequency and satellite systems. VHF Channel 16 is the international emergency frequency. As such, observations were kept on that Channel at all times. On the 15/1/04 he undertook a supervisory role co-ordinating the SAR response.

The events, tasking of SAR assets, responses and actions on 15/1/04 are set out in the contemporaneous Incident log with incident number 00084 made at the time by the MRCC operators at Falmouth (D/12/A.398). Save for one or two erroneous entries it is accepted as a correct record of events. The narrative record for the day occupies three columns. Time, the initials of the operator making the entry is listed under the heading ‘Op’, and the message being a summary of the action undertaken or message received. The copy used by the court has a header in the name of Mr Rabett timed at 14.14.57 on the 19/1/04. The log runs from a creation time of 12.38.46 on 15/1/04 to 10.21.32 on

19/1/04. A short summary section sets out the brief facts of the incident. The log then describes the air and sea assets (helicopters by number and vessels) deployed with the time called, tasked, proceeded, on scene, released and when they returned to base or port. One accepted error shows helicopter R169 on scene at 14.15.21. A later entry shows that helicopter arriving at the scene at 14.27.30. It has been accepted that later time is the correct time. Mr Rabett explained that the times reflect the action of the operator in pressing a button and therefore there might be a short time lag of a minute from the actual tasking of a helicopter for example and the time shown on the log. The times shown are GMT. I do not propose setting out all of the entries as part of this summing up.

The log began at 12.38.46 as a new incident. The new incident key was pressed by the operator to give a start time. Mr James Instance of Falmouth MRCC said when he gave evidence this was the first information for the incident and came via a telephone call from RAF Kinloss alerting Falmouth MRCC to a radio beacon activation via an EPIRB.

There are a number of times that go backwards until 12.39.45. Mr Rabett believed they were system entries. The entry at 12.38.40 referring to an MMSI change and number 228295000 which corresponds to the EPIRB beacon from the *Bugaled Breizh* that had been detected by a passing satellite. Therefore he said that around 12.38 to 12.40 all they had in the MRCC was the distress beacon being picked up.

(i) 12.40.47 MRCC made a call to the *Bugaled Breizh* on VHF and Medium frequency. There was no reply.

(ii) 12.45.07 a call from FV *Eridan* speaking to the MRCC saying *Bugaled Breizh* was capsizing and giving the position of 49 42 N 005 10W, noting there were 5 Persons on board and giving a time of arrival of 20 minutes.

(iii) 12.46.42 helicopter R193 771 squadron based at RNAS Culdrose was tasked and by 12.59.22 was airborne and over Mullion (a village in Cornwall on the Lizard Peninsula).

(iv) 12.48.05 the French equivalent of Falmouth MRCC CROSS Gris-Nez were noted to be involved in the operation.

(v) 12.50.36 *Mayday free* referred to system generated messages showing the operator was preparing a Mayday broadcast for shipping to respond to the incident.

(vi) 12.50.19 the Dutch submarine with call sign PAFF (the Dolfijn) was proceeding from the south with an ETA of 14.00. Mr Rabett said they had become aware quite quickly that a submarine was going to the scene and had made contact with the MRCC.

(vii) 12.59.59 the Lizard life boat (Liz3) launching authority was paged.

(viii) 13.01.07 R193 gave an ETA of 13.15.

(ix) 13.04.53 refers to the EPIRB frequency 406 alert being attached. He said it was the hard copy and was the first one received. He explained that as satellites passed over the transmitting beacon, its position would be detected. He was referred to the documents (Supp 3/52/A.1124 copy at Supp 3/49/A.111). He noted that the 406 alert showed a detection time of 12.53 UTC. Mr Instance later explained Falmouth MRCC did not have access to French information so they would contact the French authorities and notify them they had an alert from a French beacon and they would attempt to contact the vessel as good practice. He said the detection time on this document was 12.53 UTC and the Detection frequency was 406.002 as all beacons work on that frequency. The User class shows that a maritime vessel was involved and the combined number of 228 and 295000 is the MSI number allowing Falmouth MRCC to contact the vessel via a digital call to activate its radio. This is the entry at 12.40.47 (D/12/A.399).

In fact, the first report shows a beacon detection time of 12.23 UTC (Supp 3/49/A.1120). He said that was the time the incident occurred. He said the process takes a period of time from activation to Falmouth MRCC being notified. In this case that took 15 minutes given the entry at 12.38.46 (D/12/A.399). It should be noted the Doppler location probability percentages at 12.23 UTC were 84% and 16%.

Mr Instance described how the beacon communicates with passing satellites. He said the satellite receives the information and downloads it to a satellite station. That information is then sent back to earth, passed to a mission co-ordination centre where it is decoded and put into words and then forwarded to the appropriate authority. He said the reference to *Doppler locations* is a datum position of where the beacon is recorded at times when the satellite made contact with the beacon as A and B. The system, he said, gives a percentage confidence of accuracy. On this

form it was said, at 12.53 UTC to be 99% accurate as to the location for pass A with a position and 78% accurate for pass B with a slightly different position. As more satellites pass and continue to pick up the signal it provides confirmation of where the beacon is. He added the *Homing signal* referred to the beacon because, as well as transmitting on 406 MHz, it was also transmitting on 121.5 MHz (used by aviation and SAR assets to home in on the EPIRB). He said the report notes the activation was automatic. That would follow from immersion in water. He said Falmouth MRCC continued to receive the alerts to provide an updated position of the beacon.

(x) 13.06.38 the EPIRB hit is noted and the latest position was passed to helicopter R193.

(xi) 13.06.45 FPV HMS Tyne reported winds gusting to 50 knots from the south west, sea state 4-5 with visibility reducing.

(xii) 13.08.21 the operator grouped the known sea resources together, namely, the submarine (PAFF), the *Silver Dawn* and the Auto Transporter. They had all responded and were assisting.

(xiii) 13.10.47 refers to Mr Rabett by the acronym DOM. He said that was a reference to him then being in the operations room overseeing the response.

(xiv) 13.12.38 was a further signal from the EPIRB transmitting on another frequency 121.5mhz. That signal was noted as received by helicopter R169 at 13.14.30.

(xv) 13.16.48 Mr Rabett said the Royal Navy helicopter R169 reported being on scene and a life raft was seen. He said the operator forgot to note he was talking to the helicopter. The position of the life raft was given at 13.21.14. At 13.28.27 a report from R193 noted there were no persons in the life raft. The helicopter was back at the datum at 13.32.35 and conducting an expanding square search, there was no wreckage seen.

(xvi) 13.25.37 CROSS Gris-Nez confirmed the *Bugaled Breizh* had two life rafts. That was necessary information he said because, if two life rafts were found that would mean that was all the *Bugaled Breizh* carried.

(xvii) EPIRB beacon messages on 406Mhz and 121.5 MHz were noted at 13.33 and 13.34.03.

(xviii) 13.34.20 the *Silver Dawn* reported being 18 minutes away from the scene.

(xix) 13.43.29 R169 had recovered a casualty reported as possibly dead and the search was continuing.

(xx) 13.54.44 was a request to the RAF main co-ordination centre in Kinloss to suggest that the RAF Sea King helicopter R169 at RAF Culdrose be sent to assist R193 and to prepare another to relieve R193 if necessary. He said a longer and broader search would require more units.

(xxi) 13.57.05 R193 had recovered a second person, a position was given and they were taking the casualties to Royal Cornwall Hospital (RCH) Treliske in Truro and were then going to refuel.

(xxii) 13.58.50 helicopter R169 was tasked to go to the scene.

(xxiii) 14.11.33 a French fishing vessel (The *Eridan*) was noted to have recovered the EPIRB beacon and a life ring from the *Bugaled Breizh*.

(xxiv) 14.25.07 HMS Tyne took over the on scene coordinator (OSC) role. That was necessary he explained because when so many search units are involved one acts as the OSC. It must be large enough to direct all of the surface vessels. He added the Coastguard would give HMS Tyne the whole area and the role of tasking units to search that area.

(xxv) 14.27.30 helicopter R169 was on scene.

(xxvi) 14.42.34 given the nature of the incident, the police were informed.

(xxvii) 14.54.44 helicopter R193 was back at the scene.

(xxviii) 15.01.41 the weather was noted. Mr Rabett described the conditions as '*rough'*.

(xxix) 15.05.08 the Lizard Life boat recovered a life jacket and gave the position.

(xxx) 15.08.09 the French FV *Hermine*, wrongly noted as *Le Grande Amine,* had recovered an empty life raft and gave a position.

(xxxi) 15.10.14 CROSS Gris-Nez responded to an earlier request for information as to what the *Eridan* had been told by the crew of the *Bugaled Breizh*. Mr Rabett said the response was they were capsizing and nothing further was heard. The note refers to '*sinking'.*

(xxxii) 15.10.32 helicopter R193 reported that the life raft had been sunk. According to Mr Rabett it was standard practice to sink it so it did not cause confusion.

(xxxiii) 15.37.49 helicopter R169 reported a limited amount of time to stay on scene of 10-15 minutes and gave a position for a '*reasonable amount of debris'.* At 15.44.59 R169 was released from rescue duties.

(xxxiv) 16.30.24 HMS Tyne provided an update for events on the scene and the weather noting winds of 35-40 knots, sea state 6 with 5 metre swell and visibility was 5 nm.

Larger vessels were continuing to search and the smaller vessels had '*saturated the area of datum with 6 tracks and collected flotsam'.*

(xxxv) 16.31.06 helicopter R193 reported that it would be returning because they were beginning to lose daylight. Mr Rabett said the weather was horrendous and '*with darkness you've got an impossible task on your hands'.*

(xxxvi) A decision was made to call off the search at 17.15 due to darkness. Mr Rabett said that decision was not an individual decision. He was part of the discussion with others including the SAR coordinator and the Captain of HMS Tyne.

(xxxvii) 17.43.49 the FV *Eridan* and two other French vessels reported they were going to stay and search a little longer.

(xxxviii) 23.45.45 the Form R was received by Fax. A copy was produced with a fax header of 23.26 from 771 squadron (Supp 3/51/A.1122).

Mr Rabett said there was quite a comprehensive search the following day. Nothing of substance was recovered he said. He said a capsizing trawler was not an occurrence that happens very often. He knew of one or two recent capsizes. One he thought was due to a change of engine. He knew of one fishing vessel snagging and capsizing. He said to launch a life raft manually you would disconnect it from the hydrostatic release, put it over the side and inflate it with the painter. He said that would take roughly three minutes.

He said he had never known a submarine to be involved in a civilian SAR operation. However he said, according to the international law of the sea, attending would be consistent with a response if a vessel is in distress.

(ii) James Instance

He is a Marine Commander, MRCC Falmouth. He was not in post on the 15/1/04 and joined later that year. He is, however, familiar with the procedures and systems in operation at the time. He has acted as a liaison point in assisting with an understanding of the logs and the recordings made on the day that survived, getting them transcribed and produced in playable format. He said all of the phone calls and radio transmissions on the 15/1/04 day would have been recorded, irrespective of the channel used.

In this incident, the recordings were initially assessed and pertinent recordings were selected individually for future use based on relevance. Not all would be saved. In 2004 they would have spoken to the police and their enforcement unit and it would be agreed what audio recordings and messages would be retained for the incident. A significant tranche of messages were selected for this incident, however, over time, technical issues meant some were unplayable. He did not know what was requested at the time but given the nature of the incident a significant amount would have been requested and all recordings pertinent would have been selected. Those saved were then stored on CD-ROMS. Because of the time delay, that he described as significant, and with changes in software, it meant several recordings became unplayable due to formatting issues. Those have now been lost. He said in 2004 they retained the audio recordings for 30 days if not pertinent to an incident unless otherwise requested. In late 2018 he was able to recover a number of files so they could be played. He transferred a number of recordings in playable format. We have therefore a limited number of recordings. He said nothing had been held back by the MOD / Royal Navy.

Now, today, the position for recording audio is networked and fundamentally different. All recordings are digitalised and kept for 20 years. If there is a qualifying incident i.e. a fatality - all recordings are made available to be utilised by investigators. It is now extraordinarily unlikely that recordings would be lost. He said that they have an investigation team and recordings are made available to them.

In fact, the files that have survived are very limited in nature and are often duplicated. There are transcripts of the *Wav* files available (D/12/A.412-419). He said those that have survived are not in chronological order and have no fixed times. Mr Instance said some files can be linked to the entries in the Coastguard log therefore can be timed. The files were played at the hearing. The ones of relevance are:

(i) Files 4-8 are partial recordings from the Dutch submarine (the Dolfijn) PAFF and Falmouth MRCC (D/12/A.412). The submarine reports that it is at position 49 31.06 N and 005 16.11 W some '*12nm miles south of the reported men in water. Do you require assistance, over?'* Falmouth MRCC responded by saying '*if you could proceed and come back to us with an ETA please'*. That corresponds to the Coastguard log entry at 12.50.19.

(ii) File 23 is a request to RAF Kinloss, the rescue co-ordination centre in Scotland. It co-ordinated RAF and Royal Navy units around the country in tasking search and rescue air assets. In the recording Kinloss are asking if Falmouth MRCC had scrambled a helicopter from RNAS Culdrose. Mr Instance explained that Falmouth MRCC can contact RNAS Culdrose directly if it is urgent to expedite the tasking to ensure a more rapid take off.

(iii) File 26 consists of two radio calls. The first is from the *Eridan* reporting they would be in position in 20 minutes, the second is not relevant. The *Eridan* was told to report when it had arrived.

(iv) File 28 is also a mixture of messages but includes a recording of RNAS Culdrose (Sqdn 771) asking for details of the vessel and the persons on board. Falmouth MRCC replied giving the information and a position of 49 45 N 005 10 W. Mr Instance agreed that was the position the *Eridan* had reported at first at 12.45.07 being passed on (D/12/A.399).

(v) File 33. Mr Instance recognised the voice of his colleague (initials RPM) giving a position to a SAR resource. He said he was speaking to *Liz3* the Lizard life boat. From the log, it appears to correspond to the entry at 13.09.53 (D/12/A.400). The position given was 49 42 N 005 11.21 W.

(vi) File 34 he said it sounded like a French accent consistent with it coming from the *Eridan,* as it says '*No, no, no, no the crew the Bugaled Breizh no message this is the 10th minute sir'*

VHF Channel 16 is internationally recognised as the distress calling frequency. It is an open frequency and, for example, can be used to contact another yacht. Once an emergency was heard, the conversation would go to another channel. He said we listen to Channel 16 24hrs a day 365 days a year in order to respond to Mayday broadcasts. On this occasion all initial communications were on Channel 16.

He said the change in position for the *Bugaled Breizh* did not affect the response. He said they were aware of the EPIRB activating. He said very rapid attempts were made to contact the source of the EPIRB using the MMSI number to establish contact, however this was unsuccessful. He said while they were looking for the French authorities to give clarification and detail, the call from the *Eridan* was received giving the position and other information. He said there was no problem with the position reported given the homing signal. The aircraft and lifeboat homed in to the signal. The SAR operation was moving in the period before the position was corrected. He said the work done on the 15/1/04 was as good as it could possibly be done.

He said he had not had been aware of an incident of a fishing vessel snagging in the area concerned and he was not aware of other vessels sinking where the *Bugaled Breizh* did. He said he was not aware of any collisions in the area between a vessel and a submarine.

He described the improved systems in place today. He said alerts are seen far quicker than they used to be. In addition, there are more satellites over NW Europe looking all the time. As such, a beacon will today be picked up instantly by a satellite positioned permanently over the SW area so it has improved. He ended by saying in his 24 years in HMCG, he has been involved in 15-20,000 rescues.

(iii) The crew of Mk 5 Sea king helicopter R193 Red / Grey (Supp 2/33/A.1009)

(a) Peter McClelland (Former Captain) – Pilot of R193

He was the pilot of helicopter R193 involved in the rescue attempts on 15/1/04. He is now retired. He was a captain in the Royal Marines. In January 2004 he was a member of a SAR squadron 771 based at NAS Culdrose in Cornwall. He said their base was near Helston about 10-12 miles from the Lizard Point. He began SAR operations in 2001 and had previously attended vessels in distress as part of his duties.

He was flying a MK 5 Sea King that was grey and red in colour. He identified the helicopter from the photographs. The helicopter had a distinctive red nose, sponsons and tail section. The range with a full tank of fuel was a 200 nm radius so they could fly 200nm out and 200nm back and have 40 minutes at scene. He was flying in the right hand seat. Lt Cdr. Murray was in the second seat. The other crew members were the winch operator SACM Robertson, a SAR Diver LACMN Hall and Lt. Cdr. Cunningham was operating the radar to guide them. He described the winch being on the right hand side of the aircraft and that position gave the best view of underneath them.

On the morning of the 15/1/04 they had been on a training sortie. Having landed and while still in the aircraft and refuelling they were tasked to attend this emergency. He was given a short briefing from the crew as they came on board. They were given a datum point for a fishing boat south of Lizard point that needed assistance The Falmouth MRCC log refers to them being called out at 12.46hrs (D/12/A.398). By 12.59.22 they were airborne and over Mullion, a town south of Helston. He said the weather was a 400 foot cloud base with a reasonable wind, a fairly high sea state, winds up to 50 knots and a gentle swell. As he put it '*not the worst conditions'*. He assumed while flying they were given updates for the datum point (the scene).

He said they arrived at the datum point after 10-15 minutes because it was only 20 miles away. There were no other aircraft at first. He was not aware of an early warning aircraft there before they arrived. Initially, he saw a black and white vessel that he assumed was the vessel in distress as it was on the datum point. He said they saw a large orange life raft in the water. The Coastguard log gave a time of 13.16.48 (D/12/A.400). He said a crew member of the vessel was doing a throat cutting motion so all was not good. He was concentrating on the raft. It was inflated, floating and stable. There was a discussion and it was decided that they should lower LACMN Hall to inspect the raft. He lowered the aircraft to 40 feet and moved the aircraft towards the raft. LACMN Hall was lowered down. He described the actions of the diver in relation to the life raft and the recovery of the two crew

members of the *Bugaled Breizh* who sadly died. He said he did not see the life raft sink. The log timed the report of an empty life raft at 13.28.37, the recovery of the first casualty at 13.43.29 and the second at 13.57.05. Medical assistance was given to the casualties in the back of the helicopter and they were flown to RCH Treliske where they were met by ambulances. They then went to refuel and went back to carry on the search. They had returned by 14.54 and were on scene. It was at that point that he saw lots of small vessels, a military ship and a surfaced submarine. He had originally said in his statement the submarine was within 5 miles and north of the datum. It was identified as a Walrus class submarine by one of the crew. He had said '*Lads you're never going to believe it'* when he saw the submarine. He said he said that because it was unusual and rare to see submarines when doing SAR. At 16.49 with light fading and limited time left, they messaged that they were returning to Culdrose. They flew back to the scene on the 16/1/04 and searched for 2 hours. There was debris and wreckage but no survivors.

He said he discussed the submarine with the crew when flying back to base and that they should mention it to the Coastguard. He said '*I wasn't implicating that the submarine caused the accident'*. Later that day the Commanding Officer Cunningham said not to mention the submarine. He reflected over the weekend on that comment and spoke to Lt. Cdr. Cunningham on the following Monday saying that he felt the presence of the submarine should be mentioned. Lt. Cdr. Cunningham said he would speak to the Coastguard. Mr McLelland said '*I just thought it was an error of judgement'* to not mention the submarine as they'd '*seen something that [they] thought might help an investigation'*. He said he did not know if Lt. Cdr. Cunningham ever reported it. No reason was given for the earlier comment not to mention the submarine he said.

Finally, he was asked to look at the Form R that is completed at the end of a mission. It is normally completed as soon as they return. The copy he was shown was dated 25/2/04. Subsequently, more contemporaneous copies

were located: see Supp 3/52/A.1137 dated 16/1/04 and Supp 3/40/A.1089. The Form R does not mention the submarine.

(b) Lt Cdr. Andrew Murray - Second pilot of R193.

Lt. Cdr Murray is still serving as a member of 771 Squadron SAR at RNAS Culdrose. He gave an account consistent with that of Mr McClelland. He said after notification of the incident they were airborne after three or four minutes. He said their airspeed of 120 knots meant they covered 2 miles a minute and arrived at the scene in 10-12 minutes. They flew out at above 500 feet and then went down to a search height of 200m. He said of the conditions *'I do remember it being a pretty horrible day. It was very windy... and the sea state was whipped up quite a bit …it was quite a high sea state, big waves'.* He said they were told it was a capsized trawler. The datum point was refined. At first, they were given a general area and it was refined down as they got closer. He did not see an early warning aircraft. When they arrived, he saw the sister ship (the *Eridan*) but they saw nothing else. He had expected to see an upturned hull and people clinging to it. He said it was '*quiet'*. He said they flew over the area and got a ping from the boats EPIRB behind them so they turned around and saw a life raft. He said '*My impression remains to this day that it popped up behind us…It was a standard multi-purpose life raft, orange at the top and black at the bottom.* He said it was *'big enough that you could see it…there is a chance it could have been behind the crest of one of the waves I suppose but they do tend to stand out from quite a long distance'*. He went on to describe how the diver was sent down to examine it, how he said he had slashed the raft and the recovery of the two victims. They left the scene to take the victims to hospital. He had heard that '*169'* was coming (being a reference to rescue helicopter R169).

When they returned to the scene he recalled seeing fishing boats, an oil slick, a warship that had taken control and a submarine. He said it was surfaced, he saw the conning tower and the top of the hull. It was sailing towards the datum and taking part in the search. He said it was not particularly close to

the datum but within 5 miles. He said a crewman identified it as Dutch. He said there was always a war exercise on Thursday. This was a reference to part of the Weekly Practice Programme (WPP) that others have given evidence about. In fact, I add here the exercise for that day the 15/1/04 did not involve a submarine and the Dolfijn was in fact transiting on the surface on her way to start the ASWEX04 exercise that was to start on the 16/1/04 when she was diverted to help the search. He said none of their life rafts kept on the helicopter were used that day. He said he had attended searches and arrived to find no vessel. He said that every story is different. He said if a boat is sinking '*they can go down pretty quickly'.* He confirmed other evidence that the victims were not wearing protective clothing and were not dressed for the weather.

(c) WO1 Darren Hall – SAR Crewman.

LACMN Hall is serving Warrant Officer 1st class in the Royal Navy. In January 2004 he was a helicopter SAR crewman as part of 771 Sqdn RNAS Culdrose. He had been there for almost three years. He was trained as a SAR diver. He described his training in diving and jumping from heights to save life. He described the day in question and his involvement in being lowered first to the life raft, and the recovery of the two casualties. He was operating in extremely hazardous and dangerous conditions and managed to perform the tasks required of him despite the obvious difficulties he faced.

He said they were airborne within about 7 minutes of the call out. The flight time was 10-12 minutes. He had a vague recollection of seeing the other aircraft above them. He described it and was shown the photographs of the grey helicopter with the dome on the right hand side (Supp 2/33/A.1018).

He got changed in the back of the helicopter. He had a wet suit, fins, hood and mask, and a dive knife with a 6 inch blade. He was able to look out of the cargo door. He described the sea state as 6-7 with a relatively large swell. He said although his witness statement refers to seeing a submarine on the first sweep, he cannot now recall when he saw it. He said he definitely saw it on the surface with the conning tower out of the water in the four hours

they were there. He said '*I can tell you for definite I saw a Walrus Class submarine on the surface during the 4 hours of our search and rescue mission'.* He said when flying, if they see a submarine and a fishing vessel within range, they would inform both. He added that if there is an exercise taking place it would stop in such circumstances.

He said he saw the life raft '*fairly quickly',* describing it as red or red/orange with a roof, which was fully inflated. He said it was a 10 man life raft.

I need not set out in detail what he did other than to summarise: he was lowered to the life raft and detached from the winch so that he could swim to it. It was empty. He recovered registration documents and he stabbed one side tube and the floor. He then went back to the helicopter. He believed he punctured the life raft twice. He said '*I put two incisions into that life raft.*' He was shown photographs and confirmed it looked like the life raft he saw (S/19A.126B). He was shown a photograph of a stab mark and said it was consistent with the motion he made (Supp 1/6/A.54). He said he believed it sank but accepted that he may have lost sight of it in the swell.

He then described the recovery of the two casualties, including the efforts made to resuscitate using CPR, and the flight to RCH Treliske. He described the first casualty as wearing knee length black socks or stockings. The second casualty was wearing a white T shirt and jeans and he was a larger man, stockier in build, with a beard. He said, as with the first casualty, the second casualty was also face down in the water when he got to him. He said because he was larger it was more difficult to get him into the strop and they were hit by the sea. He described how the winch wire separated as he and the second casualty were winched up to the helicopter and how he thought he might end up in the sea.

He said when they returned to the scene there were lots of fishing vessels, a Fisheries Protection Vessel, and the submarine. He said the crew talked about the submarine and he told the pilots off for not recognising it. He said he was aware of the other aircraft.

Once they returned to RNAS Culdrose there was talk of reporting the submarine. He said he rang the Coastguard using the number on the FORM R and told them they had seen a submarine. He said he told the Coastguard that '*The Navy takes submarines seriously'* and that he had told them that they had '*spotted a submarine on the surface in the area of the operations and they said fine'*. He said he was not suggesting anything about the submarine and its connection with the *Bugaled Breizh*.

In the operations room they discussed whether it should be reported more formally. Lt. Cdr. Cunningham said it was not pertinent to the job. LACMN Hall said he disagreed with that view. He thought about it and spoke to Robertson and McClelland who said he would speak to the Commanding Officer. He said '*I was never told not to report it'*.

(d) Alan Robertson (Former Senior Aircrewman)

On 15/01/04 he was a Senior Aircrewman on the helicopter. He operated the winch. He said when he got into the aircraft he put on his dry suit and life jacket. He said they were airborne about 10 minutes after the alarm. He had a headset giving him access to communications. He heard the usual calls to air traffic and to the Coastguard gathering detail of positions. He said the position was clarified as they flew. It took 15 minutes from RNAS Culdrose to get to the scene. He recalled they were flying relatively low at approximately 200 feet at the scene because of the clouds. He scanned the area from the large open door to the side of the aircraft. He could see another fishing vessel and they got close enough to verify the name. He said it had a different name on the side. It was a French fishing vessel and it was not in distress. He saw fishermen on board and he opened his arms to ask where the vessel was. He got the same response and a shake of the head which he understood to mean that the boat crew did not know where the vessel was. He described seeing a yellow life raft. He said it was upright, serviceable, seaworthy and fully inflated. They hovered above it at 40 feet. He then saw an oil slick, floating wood and fishermen's pots or fenders. He described

lowering his colleague to the life raft and the recovery of the two casualties. He described the efforts made to save life including the clearing of the airway and the use of a bag and mask, chest compressions and attaching a defibrillator. He said the readout on the defibrillator with the first casualty was not showing any cardiac output only a flat line. No shock is advised in that situation, he said. He said the second casualty was unconscious and not breathing so they did the same advanced life support to assist him. There was no sign of life as his heart rate was asystole. When they went back to the scene he heard a pilot mention a submarine. He said he saw it as they were '*right next to it'.* He had not seen it during the first trip. He identified it as a Walrus class submarine. He said it was on the surface with the tower out of the water. He did not see any crew. They flew along the length of the submarine from tail to nose. He agreed that it was about 1-2nm from the datum position, as he had said in his statement.

He said back at RNAS Culdrose he completed the FORM R. Lt. Cdr. Cunningham typed it and he contributed. Later there was a debrief in the crew room. He said Lt. Cdr Cunningham said not to mention the submarine, he thought because the press would be interested and members of the press would be waiting in the hangar. He said that he was not given any instruction that he was not to speak about the submarine to official bodies. He did speak to McClelland and Hall and he agreed that it should be discussed. The FORM R did not mention vessels assisting in the search, including the submarine, as they are irrelevant.

(e) Lt Cdr D A Cunningham (Read evidence Rule 23 statement dated 19/1/04, 12/3/04, 23/10/06 4/7/07)

The final member of the crew to give evidence was the commanding officer of 771 SAR air Squadron based at RNAS Culdrose. He acted as an observer during the SAR operation. They responded to the Mayday and went to the location given 49 42.47 N and 05 09.02 W. They found nothing there. They had been informed of the emergency beacon and were able to home into that signal. As they did so, they saw a red multi-seat life raft. He confirmed the

actions of the diver deployed to inspect the life raft and the recovery of the two victims. He described the weather conditions as very poor with the wind at 35 knots and a sea state of 7. He said that translates as extremely hazardous conditions with a sea swell of 20 feet. He said the victims were not wearing any form of life protecting equipment. He made the decision to take the victims to RCH Treliske. Having refuelled, they returned to the scene to resume the search.

In a second statement dated 12/3/04 he said between 2.46pm and 4.49pm that day while searching the area he saw what he believed was a type 209 submarine in the area '*fully surfaced*'. He supplied exhibits including the Rescue Co-ordination System Incident Form R.

On the 23/10/06 he provided another statement. He said on this occasion they passed over the surfaced type 209 submarine as they flew to the incident after approximately 8 nautical miles. The submarine was not reported as part of the incident as it was not thought to be relevant. I add here Cdr. Simmonds later confirmed there were no type 209 submarines in the area on the day.

On the 4/7/07 he provided a final statement. He said he could not identify the recovered life raft from photographs. He repeated that the registration documents were recovered and that showed that the life raft had come from the vessel. He said he could not categorically say he saw the life raft sink. He said it could have remained deflated on the surface or just below. Given the weather the life raft would not have been visible from the air.

Finally, a section of his evidence to Mr Cox, the Acting senior coroner for Cornwall in November 2019 was read as evidence in these inquests. He explained that his role was to monitor the radar in the back of the aircraft and talk to other aircraft and ships. He said he did not hear any broadcasts from the submarine. The apparent conflict in his account concerning the sighting of the submarine was put to him. He said his first account of March 2004 was correct. He saw the submarine during the second transit to the

scene and not when transiting the first time. He said HMS Tyne would report the presence of the submarine. He said he had no memory of Mr McClelland seeking him out to discuss the reporting of the submarine. He said, finally, that while they had been in charge of the SAR operation, when they left to take the victims to hospital, control was passed to HMS Tyne who retained control thereafter.

(f) Stephen Bielby (Read evidence Rule 23 statement dated 13/9/06)

Mr Bielby was not a member of the helicopter crew however his evidence is relevant to the actions in cutting the life raft. He is a diving officer and Chief Diver at RNAS Culdrose. He was the current subject matter expert on SAR diver procedures. He is responsible for the content of the SAR diver course. He said the procedure carried out by LACM Hall in cutting the life raft is correct and in accordance with best practice as taught to all divers on the course.

(iv) Crew of helicopter XV 697 – Grey Mk 7 Sea King (Supp 2/33/A.1018-1021)

(a) Cdr James Hall

On 15/1/04 he was a member of the crew of Royal Navy Sea King Mk 7 helicopter with a call sign XV697 involved in the search for the *Bugaled Breizh*. He was a Lieutenant at the time. He was a member of RNAS Culdrose 849 Naval Air Sqdn. They were a training squadron for the Sea King Mk 7 airborne surveillance and control aircraft. He said the large bag to the side of the aircraft is a radar and when deployed is in a down position below the base of the aircraft. It is called a Radome. The photographs show the stowed position. It is used as a long range detector of ships and aircraft. The radar could provide assistance to SAR operations. The nickname was '*eyes in the skies'*. The unit was not specialised in SAR but they had some basic equipment and had SAR training. He had been trained to do what he described as '*live winching procedures with people who were wet'*.

On 15/1/04, he was on board the aircraft as a student observer practising low flying and landing onto a warship. He was instructed to build a picture of ships

operating in the area of the Cornish peninsula. A composite maritime picture was prepared using the radar. He said they went out at 11.45 hrs. He described the weather as wet and windy and a '*typical Cornish winter day'*. They worked to the south of the Cornish peninsula in areas up to 30-40 miles south of RNAS Culdrose. The radar was used to detect surface contacts from 2000 feet. At around 12.45 they reduced height to 200 feet. They received a radio transmission from RNAS Culdrose to inform them that R193 was in the air. They were given a datum for the vessel and when he put that position into the radar it was about 10 nm away. That position was 49 39.4N and 05 11.2W. That location appears at page 2 of the Images bundle marked '*Premier message'* (I/A.2). They proceeded to the datum point. He said the sea state was poor, it was windy and raining. He confirmed what was in his witness statement was correct, namely, a sea state 5-6, strong winds with rain and drizzle. He said they flew between 200-500 feet and searched by eyesight. The crew all took an area each to search. He looked through the cargo door to the right and had a good view. He could see a number of ships, a large tanker and a fishing trawler that was not in any distress. They followed a standard SAR search pattern. He saw debris in the water that appeared to be to be a round life saving device and later he saw a life raft. It was a multi person life raft and appeared to be fully inflated. It was a bright colour that was maybe red or orange. He could not see if anyone was in it as it was over 200 feet away. It was close to the fishing vessel that he saw. They made a pass from 200 feet. They knew R193 was on route and they stayed until it arrived. He saw R193 operating in the vicinity of the life raft and so they departed as they had limited fuel. If anyone had seen a helicopter with a large ball it was likely to be their aircraft. He said that the radar would detect anything above the water and a submarine would appear as an object but he would not be able to tell what it was. On the radar the size of an object would be reflected in a larger image. He did not recall seeing anything at the datum point when they set off. The radar would detect objects up to a distance of 10 miles.

(b) Simon Flynn (Read evidence Rule 23 statement dated 11/10/06)

On the 15/1/04 he was a Lieutenant in the Royal Navy and flying as an instructor crew member. During the training flight they received

information concerning a Mayday from a French fishing vessel in their vicinity. After plotting the position it was about 20 miles away. They coordinated with Falmouth MRCC and went to help. He thought the transit time as 10 minutes or less. As they approached the scene, they flew down to 200 feet and reduced speed to 60 knots. There was no sight of any vessel or any contact on radar. They searched doing several low orbits of the area. Having seen nothing, they commenced an expanding square search from the original datum point. He said the seas were moderate with moderate visibility and full low cloud cover. After about 10 minutes, SAR R193 arrived and they coordinated the search with them. He saw one non-military vessel and did not see any military surface or sub-surface vessels. After 20 to 30 minutes they had to return to RNAS Culdrose to refuel.

(c) Norman MacDonald (Read evidence Rule 23 statement dated 29/9/06)

On the 15/1/04 Norman MacDonald was a staff pilot at 849 Naval Air HQ RNAS Culdrose. He was the pilot of the grey Sea King helicopter XV 697. The helicopter is an airborne early warning aircraft. The equipment on board meant it was good at conducting a surface search as part of a search and rescue operation. He described the weather as quite strong winds and rough seas. He confirmed the evidence of other crew members. He did not see any other vessel in the vicinity when searching and did not see a submarine.

(d) Simon Richards (Read evidence Rule 23 statement dated 25/9/06)

Simon Richards was a Lieutenant in the Royal Navy. He was working as a Reserve Service Observer instructor at the time. He described the round Radome on the side of the helicopter that is deployed in the down position in flight. He explained it is a search radar which was utilised in surface mode at the time. The radar resolution is so good that debris and buoys can be detected. He also gave evidence consistent with the other crew members as to their response to the emergency and the search undertaken. He recalled a fleeting radar contact in the vicinity of the datum during transit but the validity of the contact could not be verified. He saw no survivors, wreckage or other indications of the incident. They searched at between 100 and 200 feet. The visibility was good enough to see surface contacts at 3 to 5 nm.

The sea state was medium. He did not see nor was he aware of any submarine activity in the area.

(v) Crew of helicopter R169 –Sea King Mk 3A Yellow (Supp 2/33/A.1022-25)

(a) Martin Brooman (Former Lt.)

In 2004 he was a Lieutenant in the Royal Navy working with the RAF. He had served for 21 years. He had been a Royal Navy Pilot for 10 years and had worked for 6 years as a SAR pilot. At the time he was based at RAF Chivenor in North Devon. On the 15/1/04 they were operating in St Austell bay. Their role was to conduct training for themselves, other units, lifeboats and mountain rescue teams. Wing Commander Dixon was flying the aircraft. They were undertaking wet winching training for RAF St Mawgan. He described the activity for that day. Having been put into the sea they would winch people to the helicopter and drop them off. While doing their work they were monitoring rescue frequencies, including those used by RAF Kinloss and Channel 6 to hear Falmouth MRCC, if need be.

They received a call summoning their assistance. The message was that a fishing boat had gone down south of Lizard Point. He confirmed they were called around 2pm, from looking at the Falmouth MRCC log showing a call at 13.58.50 and proceeding at 14.04.14 (D/12/A398). He said they would have heard messages relating to the casualty before being tasked. He said they might have dropped the casualties from the exercise first, which might have taken 30 minutes. He was asked about the apparent anomaly in the Falmouth MRCC log that showed them on scene at 14.15.21 in the *Resources* section whereas in the narrative section their on scene time is recorded as 14.27.30. He said given their distance from the scene of about 45 miles and a flying speed of 2 miles a minute it would have taken them about 30 minutes to get to the datum, depending on the wind. Therefore the later time was probably correct.

He said they were asked to do an expanding square search. He saw wreckage but no casualties. He saw a submarine, but not at the start and he could not

remember how long after they arrived it was before they saw it. He said it was a small diesel powered submarine which was either German or Dutch and he thought it might be a Walrus class submarine from the Netherlands. He said the crew discussed the fact that it was not good to see a submarine in the vicinity of a fishing vessel that was missing. He said '*the two don't mix'.* He said this was just a general comment. He said the submarine was on the surface with the conning tower out of the water. He said he did not see it surface while they were searching. He was asked about the comment in his statement that '*it must have surfaced'*. He said he believed they would have seen it as they approached the datum and they did not. He said it was possible it was on the surface and they did not see it. He confirmed the Falmouth MRCC log entries which stated at 15.12.08 '*conducted search nothing found returning to datum',* 15.37.49 '*15 mins left on scene*', at 15.44.49 '*R169 released to refuel at CU then RTB with TKS'* (return to base) with thanks were correct. He said they were on scene for about one and a half hours. He said he did not recall anything being said about the submarine between him and his colleagues and no one told him not to report the submarine to the authorities.

He said he had been a submariner for four years and knew the hazards posed by submarines to fishing vessels. He was asked about the comment in his witness statement of having an '*uneasy feeling'*. He said *'I can't speculate as to what occurred on the day but submarines do pose a threat to trawlers with their nets out'*.

(b) Jonathan Evans (Former Flt. Lt.)

In January 2004 he was a Flight Lieutenant in the RAF. He retired in 2014. He was based at RAF Chivenor. On 15/1/04 he was the Captain of helicopter R169 involved in the search for the *Bugaled Breizh*. That day the crew were the first stand by crew on a 24 hr call duty. He had undertaken SAR work in the 1980s and was an instructor in 1990. He said the Sea King Mark 3A was a modern aircraft having been built in the 1990s, whereas others were built in the 1970s and 1980s. That day they were doing a training trip for Wing Commander Dixon doing wet winching and survival drills in St. Austell Bay. He said it was about

45 miles from St. Austell to the datum. He said the weather was worse at the scene than it had been in St Austell Bay. He said the winds were in excess of 30 knots with a sea state 6. They were tasked to proceed to the datum to search for persons in the water following the sinking of a French trawler. He said it took 25 minutes to get to the scene. He said the on scene time of 14.27 was more realistic. They knew helicopter R193 had been in the area and had left with two casualties. He said their task was to continue the search looking for survivors. They were flying at a maximum height of 500 ft and then came down to 200 ft because of the weather. He said they could see another trawler they knew was paired with the vessel of concern, a RNLI lifeboat and debris on the sea. He said visibility was 2 miles and he saw no other vessels. They were asked to do an expanding square search but because of the wreckage they saturated the datum with a clover leaf search pattern being 30 degree search segments. He said any debris was less than a mile from the datum point. He said their saturated search took 15 minutes.

He said when they went into an expanded search he saw a submarine. He said he could not remember when he saw it. He said it must have been within 2 miles of them because of the poor visibility but it was not particularly close. He said it was surfaced when he saw it. He did not see anyone on the tower. He said he had not seen a submarine involved in a search before and it was unusual. He had not seen a submarine in SAR operations. He said he would expect a submarine to respond to a casualty in the same way as any other vessel in the area.

He said they did not see a life raft but had heard it discussed. He said that sinking it would be normal practice. They were on scene for 1 hour 15 minutes before being stood down at 15.44.

(c) Jonathan Dixon (Read evidence Rule 23 statement dated 11/10/06)

Wing Commander Dixon had no independent recollection of the incident and could not remember being part of the crew on the 15/1/04.

(d) Andrew Leonard (Read evidence Rule 23 statement dated 16/10/06)

He was a helicopter winchman on the day. He recalled seeing a lot of vessels in the area of the incident when they arrived on scene. He saw a submarine on the surface. It was light blue in colour. He said he could not see much of it.

(e) Stephen Ward (Read evidence Rule 23 statement dated 16/10/06)

He operated the radar and thermal imaging equipment to assist the SAR. He noted they arrived at the datum at 1427Z and commenced an expanding square search of the area at approximately 200 feet. They were released at 1546Z and departed the scene to refuel at RNAS Culdrose and return to base.

(vi) Phillip Burgess – the Coxswain of the Lizard Lifeboat

Mr Burgess was, in 2004, the Coxswain of the Lizard life boat. He had held that position since 1988. He and his crew were involved in the rescue efforts. He is no doubt vastly experienced and knew the area and the vagaries of the sea that this case concerns very well. He gave the speed and range of his vessel as being 16-17 knots with a range of 240 miles. That day the crew were at the boat house as the mechanics were doing a course. The life boat was outside on the slip way and so they launched very quickly. He estimated that, within four minutes from the call, the lifeboat was in the water. There was a crew of five.

He explained the call out procedure in 2004. They had heard about the incident concerning a French fishing vessel on the radio but could not launch until the Lifeboat Operations Manager (LOM) approved their involvement. The coastguard would not call them directly but would call the LOM to ask for assistance. This system may have added a short delay to the engagement of the lifeboat but it was not significant in the circumstances. He said once permission to launch was given he would receive further details from Falmouth MRCC. He was given a datum position and told they were concerned with a French trawler capsizing about 15nm off Lizard Point.

The Falmouth MRCC log shows the call sign of the vessel as LIZ3 (D/12/A.398). They were called at 13.09hrs, proceeded at 13.21hrs and arrived at 14.21hrs. He said it would take about 1 hour to get there. He said when they arrived, HMS Tyne was there, as well as a fishing vessel from Newlyn. He could tell they were over the area of the sinking by the smell of diesel. He said some dead Conger Eels had come to the surface. He said he did not need the plotter to find the scene because the smell told him they were in the right location. They recovered five fishing baskets and a red life jacket that had the name of the *Bugaled Breizh* written on it. He said they were searching the area not moving more than half a mile from the datum performing repeated searching loops. He saw a surfaced submarine go through the search area. He saw the conning tower of the submarine. His said his mechanic Roger Legge said he had seen it surface. They had been at the location for about 45 minutes when he saw the submarine. He said it was moving at 8 to 9 knots. He said it did not seem like a British submarine and was smaller than ones he had seen. When he saw the submarine, it was about a half to three quarters of a mile away to their starboard side, passing them going east.

He confirmed the timings in the Falmouth MRCC log of 15.05hrs for finding the life jacket and 15.08hrs reporting lots of diesel. The weather he described as a wind of 45 knots, a heavy sea swell saying '*it was a rough old day, visibility wasn't very good, it was…coming and going'* He said there was quite a heavy swell. They carried on until dark when the search was called off. He said '*You cannot see much with search lights'*. The log showed they were back to their station at 18.16hrs. He said '*It was a lot easier ride coming home'*.

He said, finally, he had never seen a submarine respond to a rescue. He said '*they are a secretive lot'*.

(vii) Roger Legge

He was a member of the Lizard lifeboat crew and having been mentioned by Mr Burgess he was called as a witness at short notice. He gave evidence by video link. He confirmed that he was a member of the crew called out on the 15/1/04 in response to the sinking of the *Bugaled Breizh*. He said the weather

'*was very rough not too bad, a bit misty a dull day.*' He said he did see a submarine *'around half a mile to a mile…. going to the east'.* He said they had been at the scene for half an hour to three quarters of an hour when they saw it. He had been on the upper deck searching. He said visibility was fine and he could see the submarine '*clear as a bell'.* He said the tower was right out of the water when he first saw it and had already surfaced. He added that he '*couldn't say honestly I seen it come out of the water.. I might have dreamt it….everybody on the lifeboat would have seen it anyway…and nobody actually said they seen it come out of the water'.* Finally he said '*I seen it disappear after a while ...to the east'.*

The location of submarines:

16. Three witnesses were called. Rear Admiral Asquith, Commander Simmonds and Commander Coles. Rear Admiral Asquith and Commander Coles were officers on board HMS Turbulent on the 15/1/04. Rear Admiral Asquith also gave evidence concerning the location of non-allied submarines.

17. It is important to note the following. A bi-annual ASWEX exercise was due to commence on the 16/1/04 involving a number of allied, that is NATO allied, submarines. In 2004 it was called ASWEX 04. In order to participate in the exercise some had to transit across the area where the *Bugaled Breizh* sank to reach designated areas where dived activity had been permitted. The evidence sought to establish the whereabouts of the submarines and, in particular, if they were submerged (dived) at the time of the incident. The evidence for each is separate and I will summarise the evidence according to the particular vessel. The messages, signals, planning for submarine movements and other documents have been carefully analysed and have been the subject of detailed testimony. In addition to the ASWEX 04 exercise, a Weekly Practice Programme (WPP) allocated water for military exercises that week and named vessels and units involved. As part of that planning, an exercise known as the *Thursday war* or *Weekly war* was conducted on Thursday 15/1/04. That involved surface ships and not submarines. The passage of time has removed from my investigation two witnesses, one deceased and the other retired. Others have attempted to deal with the evidence they would have given as best they can.

Commander Daniel Simmonds

18. He is the Submarine Operations Officer at Northwood. He joined the Royal Navy in 1999. In 2003, he joined submarines and has been a submariner since. He has held roles from junior warfare officer and to last year was the CO of a submarine. In January 2004, he was a Lieutenant on HMS Trenchant, a Trafalgar Class submarine. In January 2004, she was alongside in Devonport at the end of a period of extended maintenance. He had no direct involvement in the ASWEX 04 exercise or the inquiries concerning the sinking of the *Bugaled Breizh*.

19. His current role is as Commander of Operations at Northwood. He is in charge of daily operations for all UK submarines and all NATO submarines under our operation and control. He had reviewed the statements made by Lt Cdr Pollitt who has since retired and would not have had access to military materials. He said he had he had reviewed statements made by Lt Cdr Pollitt. He said he had studied the underlying documents in those statements. He said he had approached the evidence from baseline principles. He said all of the documentary evidence has been checked in detail. If he had come across material during his preparation that suggested the presence of another submarine, other than the three identified at the time, he would have not hesitated to make this known to the Court and it would have been in his best interests to be open and honest.

<u>The operation of submarines in UK coastal waters.</u>

20. CTF311 is the Commander Task Force 311. It is a Submarine Operating Authority (SUBOPAUTH). It operates all of the UK's hunter-killer and Trident submarines when under training. They also control NATO and allied submarines in UK managed exercises. The SMAA NATO Submarine Advisory Authority is also based at Northwood. It determines if there is interference between submarines operating in their area of responsibility. If both want the same water, the SOAs reach a safe resolution.

<u>Submarines and fishing vessels.</u>

21. He said it is very well understood that submarines can pose a danger to fishing vessels trawling. There is a Code of Practice agreed between the Royal Navy and the fishing

community that at the time was called Submarine Publication 95 it is now called BRD 95. SMP 95 was first issued in 1999 (Supp 2/25/A.849 - the version relevant at the time dated 5/6/02). It describes the arrangements and procedures put into place for the conduct of dived submarine operations in waters frequented by UK vessels engaged in fishing. The arrangements apply to Royal Navy submarines in all waters frequented by UK vessels engaged in fishing and applies to allied submarines operating in UK territorial and internal waters. Before a foreign submarine dives in UK territorial waters, its commanding officer must be briefed comprehensively on the conduct expected of him when operating in the vicinity of UK vessels engaged in fishing as set out in the code of practice. There is an essential military requirement to operate submarines submerged in waters where UK vessels engaged in fishing may be operating in particular coastal waters. The MOD accepts that the prime responsibility for these operations being conducted safely when vessels are engaged in fishing and may also be present rests with the Royal Navy. The most effective way to eliminate incidents between dived submarines and such vessels is to reduce to a minimum the number of occasions when dived submarines are present when fishing is taking place.

22. He gave evidence as to distances and speeds to be maintained for essential dived transits. Dive time should be kept to the minimum in the vicinity of fishing vessels, he added. A mandatory separation distance of 1500 yards from all vessels engaged in fishing should be maintained for all submarines in transition from surface vessel down to and including periscope depth. When at periscope depth, operating other than with a continuous all round look, the mandatory separation distance is 4000 yards or 2 nm from all vessels classified as fishing vessels whether they are fishing or not. If adopting an intermittent all round look but with an on board radar safety cell, the mandatory separation distance is 1500 yards. If below periscope depth, the distances are 4000 yards or 2 nm from all vessels classified as possible fishing vessels whether or not they are believed to be engaged in fishing. The rules applied to all UK submarines and allied submarines under UK control. He said if a submarine is operating near fishing vessels it must communicate with those vessels before diving. If there were to be a collision with a fishing vessel or her gear, SMP 95 provides specific procedures to be followed to ensure safety. The submarine is required to surface in a controlled manner. He said he was not aware of SMP 95 not being followed. A Vanguard class submarine would also be expected to follow the guidance. He said the Code of Practice makes up chapter

1 of SMP 95. The remainder is guidance for submarine commanders or operators. The Code is revised and is reissued after deliberations with fishing industry safety groups. He said he had never been on a submarine involved in the snagging of a trawl net.

Records of submarine locations and movements.

23. He said there are various measures and forms of documents that pre authorise the movements of submarines. The intention is that any movements below surface level are cleared and notified to local shipping because there is risk. Dived movements require particular approvals.

Subnotes.

24. A submarine notice (SUBNOTE) is a formatted message issued by the SOA CTF311. It orders the submarine to move from port and informs that movement to others. It is highly formatted and states permission to dive and when and where it can dive. A submarine will request a Subnote for movement, and the authority in whose waters it is operating will issue the Subnote using a format and instructions based on a NATO publication. When there is a planned move over any NATO exercise area, the submarine cannot dive unless approved to do so and there is allocated specific water space for the dived operation. The Subnote is the authority to dive. If a submarine dived without a Subnote it would be a breach of NATO and UK policy. A submarine Captain cannot make a decision to dive himself. Submarine movements have to be approved by CTF311 in a Subnote.

25. To notify fishing vessels in the South Coast Exercise Area of submarine operations a SUBFAX is issued via NAVTEX in a printed out format. They are issued at the same time each day every 12 hours. He noted Lt. Cdr Pollitt stated every 6 hours. Mr Hosking of the *Silver Dawn* had seen the one issued for the 15/1/04. Broadcasts on VHF and the times are the same each day so you would know to look out for it. He said the system relies on the MOD feeding the information. In this case it would be information from the WPP. The submarines have authorised areas and the submarines have responsibility to maintain safe distances. The QHM organises movement in any port and a daily movement signal to show movement at designated times is promulgated the day before

to notify other shipping of onward movement and to authorise departure at designated times.

The Weekly Practice Programme (WPP).

26. The South Coast Exercise area (SCXA) is a permanently established exercise area. The local area manager is within an organisation Flag Officer Sea Training (FOST) who organise training and control the area. The WPP records all military activity approved in the area. The WPP will show the serial number, the vessels taking part, the type of exercise areas allocated and any special instructions. The WPP will show the name of a submarine in a participant column. He provided a chart of the SCXA with the areas marked. The areas are assigned for specific military activity. A submarine can be allocated one or more areas to operate in but must have authority from a Subnote. The procedure in practice requires to submarine to make two requests; one for a Subnote, the other for areas to operate in. A submarine therefore has to liaise with CTF311 for the Subnote. If movement is not permissible, a Subnote will not be issued. He expected the submarine to ask FOST first for space and if water is available, the request for the Subnote would follow. The *Bugaled Breizh* sank in area Delta 1. The adjacent areas are Charlie 2 and 3, Delta 2, Echo 2 and Falmouth bay to the north. He said it would be a serious breach of NATO policy for a submarine to be dived within an exercise area without the permissions required. He said there was one certified copy of the WPP for the week in question. There were other copies with small changes such as to timings but otherwise they do not contradict the certified copy. He added that the team at CTF311 would ensure the certified copy was used to make sure there was no vessel conflict.

ASWEX exercises.

27. These are twice yearly anti-submarine warfare exercises conducted by NATO allied countries. In 2004 the plan was to start on Friday 16/01/04 and to run for some days. He said it involved a surface task force of warships and helicopters escorting a tanker, which was opposed by dived submarines in a number of separate serials broken down to a form serialised programme. That exercise would likely warrant a FVSO (fishing vessel safety officer) on a surface ship to monitor and provide extra safety, giving regular broadcasts, and any fishing vessel within 3 miles of a submarine would be

contacted by that surface vessel. The areas to be used were assigned from 16/1/04 to 27/1/04. Some units might be in the areas beforehand undertaking independent exercises before the broader ASWEX exercise began including in the Southern Fleet Exercise Areas (SFEX), that are also administered by CTF311.

The Thursday war exercise on 15/1/04.

28. This is a separate regular exercise and that was taking place on 15/1/04. The participants were HMS Edinburgh, Cumberland and Montrose and RFA Bramble Leaf; all surface ships and early warning aircraft. No submarines were involved (S/46/A.385). He did not know why HMS Montrose was not listed. The plan shows in red the area where the Thursday war exercise was to take place (I/A.1). It is to the east of the position of the *Bugaled Breizh*. The exercise was to be performed as if the other ships were protecting the tanker from a submarine. He said if a submarine was part of the task force it would be listed.

Submarines.

29. The WPP for the week commencing 12/1/04 confirms the ASWEX 04 would be conducted in the SCXA west of 005W from 1200Z on 16/1/04 (S/47/A.403). The serials are listed from 12/1/04 for each day (S/47/A.424). The submarine movements on 15/1/04 and 16/1/04 on the WPP are (S/47/A.462):

(i) Submarine U26 was exercising in areas J1, H1 and I1 and time limited until 1000Z. In fact it was alongside at 07.48hrs and was there until 1600hrs. It would only dive if authorised to do so in the Subnote. The return to harbour was noted (S/47/A.464). U26 was to sail from the docked position from 15.45 (S/47/A.473).

(i) Submarine U22 was given areas 43 miles to the east to be precise of the *Bugaled Breizh* namely areas J1, J2, H5, I2 and I3.

(ii) HMS Torbay, a Trafalgar class submarine, was given areas A1, A2 and B1 out to the west from 0400 to 2359. On 16/1/04 Torbay was given areas A1 A2 and B1 (S/47/A.480).

(iii) The Dolfijn was given areas from 1200 to 2359 namely A3, B2 and B3 (S/47/A.470). These are to the west of where the *Bugaled Breizh* sank and 22 miles

at the closest point. On 16/1/04 the Dolfijn was given areas A3, B2 and B3 (S/47/A.481).

(iv) Detailed instructions for areas that might be covered by the Thursday weekly war exercise are set out (S/47/A.467). Area D1 appears but the exercise did not include submarines.

(v) On 16/1/04 HMS Triumph was due to sail from alongside at 0815 (S/47/A.483). At 1000 to 2339 she was to be at area FOWEY. He said Triumph was in Devonport at the time of the sinking. She was allocated water for the 17/1/04 (S/47/A.492).

(vi) On 16/1/04 HMS Turbulent was also to sail from alongside at 0900 (S/47/A.484). The WPP shows she was going to the Degaussing range to inspect her magnetic signature and given area WEM A to do that. Her movements on the 16/1/04 were described in detail by Rear Admiral Asquith and Cdr Coles. The securing to a buoy is noted (S/47/A.489). She did not join ASWEX 04 as planned. HMS Turbulent did not have access to dived water on the 16/1/04 (S/47/A.491).

(vii) The ASWEX 04 areas for 16/1/04 are set out between 1200 and 2359 (S/47/A.487).

30. The Queens Harbour Master records for 15/1/04 and 16/1/04 (S/47/A.528). The records show vessel movements for 15/1/04 (S/47/A.526).

(i) U26 arrived from the sea at 0645 and went to berth 10W. At 1600 U26 went to sea. U26 is the only submarine to enter Plymouth on the 15/1/04 and go back to sea.

(ii) HMS Trafalgar had been in dry dock 10 but at 0830 the dock was flooded hence *'flood up'*. She was secure afloat at 1915.

(iii) On 16/1/04 HMS Turbulent sailed from wharf 8W(S) to Plymouth Sound. Her planned day was to be at sea at 0945 and at the Degaussing range until 1630. The tugs are noted and the note refers to drogues being deployed. He said a towed array is attached to a stud cable and the easiest way to get to the cable to attach the towed array is to have floats known as drogues behind the submarine. She was noted to go to Delta Buoy in the afternoon (S/47/A.529).

<u>Signals on 15/1/04.</u>

31. He said Lt Cdr Pollitt was serving as the Staff Officer for CTF311 at the time. Lt Cdr Pollitt has said in his statement of 6/4/06 that he was in the Fleet Operations room at 1305Z when the fleet duty controller received a call saying that Royal Navy units in the SCXA were responding to a sinking of a French fishing vessel south of Plymouth. He issued a signal to ask all submarines to record their position in control room logs. Cdr Simmonds said that would be standard procedure. The signal at 1454Z (D/10/A.265) from CTF311 was sent to SUBFLOT (being a catch all for everyone in the submarine flotilla) so the message went to all submarines. It was also sent to the Dolfijn and U22. It was sent to CINCFLEET (Commander in Chief Fleet) and others. The submarines were asked to report their position at 1253Z in the ships log. I note the message refers to a position for the incident and says *'although this occurred in areas which were not allocated to submarines'.* A later message at 1724Z requested that HMS Torbay, the Dolfijn and U22 to report their position at 1253Z (D/10/A.266). HMS Torbay reported her position at that time at 1737Z being 107 miles to the west of the incident, the Dolfijn responded at 1813Z giving her position as 11 miles to the south west and stating she was '*conducting surface transit'* and '*Joined SAR-Operation until 151715Z'*. At 12.53 she was 11 miles SW as she had by then closed her position for SAR operations. U22 responded at 2028Z giving her position at 1253Z being some 43 miles south east of the incident. He said it was correct that they were the only three submarines at sea at the time of the sinking.

32. Cdr. Simmonds confirmed that CTF311 has a computer system with all Subnotes to show where the submarines are, what areas are allocated and to guarantee no interference between units. He said the signals were consistent with the positions given and plotted by Lt. Cdr. Pollitt on his chart (I/A.1).

33. On 17/1/04, a signal was sent by CTF311 at 1008Z confirming the positions of the three submarines to a number of addresses including CECLANT, the French military equivalent of the Commander in Chief Fleet CINCFLEET (D/10/A.277). The Dolfijn at 1048Z gave an account of her actions on the 15/1/04 (D/10/A.278). That was in response to a signal sent at 0844Z asking for a report (D/10/A.271). I note by 1050Z on 17/1/04 FS Andromede had been allocated an area to search for the *Bugaled Breizh* (D/10/A.279). Their investigation was completed and a signal to that effect was sent at 2126Z on 18/1/04 (D/10/A.282).

34. Further signals were sent asking for information from the submarines to assist the examining French Magistrate. The Dolfijn made clear on 19/1/04 at 1914Z that she did not receive the original Mayday signal but overheard a communication from a French FV and Falmouth Coastguard (D/10/A.288). HMS Tyne submitted a detailed response on 19/1/04 at 2156Z (D/10/A.289). That notes the all ships distress call was transmitted by Falmouth Coastguard at 1252Z on 15/1/04.

35. Cdr Simmonds said the messages show CTF311 and CINCFLEET were making investigations to assist with who was in the vicinity and in the area at the time. He said the only submarines at sea were U22, the Dolfijn, and HMS Torbay. He said any other submarines in the area would have been referred to in the signals and be reflected in the documents. He is not aware of any information suggesting that any other UK, NATO or allied submarine was in the area at the time. He said he was not aware of any other submarine in the area at that time. He was completely confident that none of the UK submarine fleet was in the area at that time, including hunter killer submarines and deterrent submarines. He stated that the Royal Navy had declared all submarines which were operating in the south coast exercise areas on the days in question. He said there were no UK or NATO submarines that could have been in the area at that time. He confirmed that the message sent on 17/1/04 at 1008Z was the Royal Navy providing to other nations the details of the three submarines at sea that day and their locations (D/10/A.277). The position was therefore clear, he accepted, two days after the incident.

36. <u>Individual submarines</u>:

(i) The Dolfijn. She was transiting from Den Helder 500 nm to the east to join ASWEX 04. The Subnote from CTF311 is dated 9/1/04 at 0915Z (D/10/A.252). The Subnote authorises the submarine to leave Den Helder on 13/1/04 at 1400Z and return on 20/2/04 at 1045Z. For the 15/1/04 the SUBTRK, SUBMHN and SUBMODE directs movement from Den Helder to her dived water (Yellow on the chart). SUBMODE shows movement is '*surfaced'* and she was expected to be in her dived allocated water at 1600Z. The reference to '*required Coastal'* meant she had freedom of movement and did not have to go in a direct line. She was expected in her exercise area at 1600Z on 15/1/04. SOPAREA 1 refers to 15/1/04 at 1200Z. The WPP had

allocated her water to dive in from 1200Z some 22 miles to the west of the sinking. That would be the earliest she could have dived in that area. The areas were open until 0001Z on 16/1/04 when she would have moved to the ASWEX allocations later. Therefore the Dolfijn was to transit on the surface toward the exercise areas. Only when she reached the marked yellow areas was she allowed to dive. The notes state that submerged operations are not authorised until in receipt of formal allocations by CTF311 and FOST Devonport (D/10/A.254). He said she was on a westerly south westerly course 252 at the time she received the Mayday. He said a chart produced by Admiral Salles was consistent with the log and change of course at 12.53 (Supp 1/12/A.207). She altered course to starboard steering 024 going north east. He added at this point that it was right to rule out, as Admiral Salles had, the Dolfijn as being involved and added the same for a US submarine being in the area at the time.

(ii) HMS Torbay

On the 15/1/04 she was due to be conducting independent exercises in the channel to the west of the area where the *Bugaled Breizh* sank. She was due to be dived 107 miles west at 12.53. He said the sailing time from that position to where the *Bugaled Breizh* sank was about 12 hrs. The Subnote from CTF311 is dated 9/1/04 at 1047Z. She was due to sail on the 13/1/04 but sailed on the 14/1/04 (D/10/A.257). There is a new Subnote for departure on 14/1/04 at 0845Z to the submarine operations area 1 (D/10/A.261-262). On 15/1/04 the only available areas for dived activity were A1, A2 and B1.

The QHB Movements record is consistent with the account he had given, showing HMS Torbay leaving Devonport on 14/1/04, transiting on the surface to the areas well to the west of where the vessel sank and being in those areas on the 15/1/04 at least from 0400hrs (S/47/A.524).

The ships log for HMS Torbay for January 2004 has entries consistent with her departure on 14/1/04 at 0900 and the signal sent and the position given for 1253Z on 15/1/04 (Supp 2/35/A.1032 and Supp 2/35/A.1048a). At the time she was dived in the area allocated, 60m deep.

(iii) U22

He said the submarine was surfaced in the areas allocated at 1253hrs 43 nm SE of the *Bugaled Breizh*. The WPP areas allocated were H5, I2 and I3.

(iv) HMS Turbulent

The Subnote was sent on the 9/1/04 (D/10/A.255). She was to leave Devonport on 16/1/04. It referred to the ASWEX operational order. The Duty Fleet controller is a one of several 24/7 watch keepers in Northwood. The narrative is called a *draft operations brief* (D/11/A.390). The narrative covers the incident itself. It confirms HMS Turbulent was to sail on 16/1/04 heading towards the ASWEX exercise. The incident with the drogues is noted and that she did not transit more than 5nm of the breakwater before returning alongside the next day (D/11/A.392). The berthing plan for Devonport shows HMS Turbulent due to sail at 0900 on 16/1/04 (S/46/A.390). She had been alongside since 5/1/04. I note her position for the 16/1/04 is stated as '*D Buoy'*. The QHM movement records for 16/1/04 record her sailing at 0900. The WPP states the same (S/47/A.483). A letter sent on 24/5/05 to the French authorities refers to HMS Turbulent at Devonport for the whole of 15/1/04 (S/42/A.200). The log for HMS Turbulent confirms her not moving on 15/1/04, her position at 1253 is recorded and activity for the 16/1/04 sailing at 0900 (Supp 2/31/A.971). A separate note concerns the incident with the drogues and the note of a man overboard at 1351hrs and the signal to CINCFLEET regarding the incident at 1645hrs (Supp 2/31/A.972 and Supp 3/38/A.1078). There is also a ships investigation (Supp 3/38/A.1077c).

U26, HMS Triumph and HMS Trafalgar

(v) He confirmed for the 15/1/04 that U26 was alongside until 1600Z as shown by QHM records and Subnote. HMS Triumph were alongside in Devonport on 15/1/04 with supporting documents namely the berthing plan, officer of the watch log and statements of officers. HMS Trafalgar's log supported the same contention. She was alongside on 15/1/04.

37. Cdr Simmonds was aware that the French proceedings concluded that that all enquires indicated that no other allied nation had a submarine at sea in the area. He said having been through all of the evidence in detail, other than the submarines declared, he confirmed that there were no other allied submarines in the vicinity of the sinking. That included all types of submarines and all allied fleets. He confirmed that based on all of the inquires made, they are consistent with the answer given by the US authorities to the French courts, namely, that there was no USA submarine within 100nm of the incident (D/14/A.482). He said U22, the Dolfijn and HMS Torbay would have to have been in different positions to their own signals and recorded positions. For any other submarine to be involved it would have to be well outside the area it was permitted to be in. The Dolfijn would have had to be in breach of her instructions to be on the surface and ignoring basic safety rules and her documents would have to be false. For HMS Turbulent to be involved a lot of documents would have to be falsified. He said no submarine was within 5nm of the *Bugaled Breizh*. He said no class 209 submarines were in the area at the time.

38. He said the ramifications of deliberately falsifying the records would absolutely erode the trust at the highest levels between allied partners. He said he had never known it to happen '*because it's just unthinkable'*. To falsify a log and present it to the world would be a serious breach of military discipline.

39. He confirmed the statement of Rear Admiral Asquith concerning non-allied submarines was, to the best of his knowledge, absolutely correct.

40. When questioned by Interested Persons he said the evidence he provided was unequivocal as to what allied submarines were at sea at the time. He saw no other avenue that would shed light or otherwise on the conclusion reached which is that there was no submarine, allied submarine anywhere near the sinking of the *Bugaled Breizh*. In 2004 there were Swiftsure, Trafalgar and Vanguard class submarines but not Astute class submarines. He was unsure of the total number of submarines in commission in 2004. He confirmed Vanguard class submarines are Trident or deterrent submarines, and maintaining secrecy of their location is incredibly important from a national security perspective.

41. He disagreed with the proposition by Admiral Salles than an allied submarine could enter British exercise areas without signalling itself. He could not envisage that being the case in the Southern Coast Exercise areas due to the issuing of the WPP. In terms of how the area is controlled, he said '*it's tightly controlled in how the areas are allocated.'* He confirmed what Admiral Salles had said, that other allied submarines have to follow the processes discussed and that the allocation of areas is key. He was absolutely confident in how the Royal Navy manages the areas now and how it managed them in 2004. He said deviating from that policy with NATO and allied nations would be absolutely unthinkable. He added Courts martial would be the least of our worries in that situation and that Allied navies would not be welcome back in British areas if they did not follow UK procedures. He said not all submarines in UK exercise areas are under UK operational control and some discussed were not at the time, however, when operating in areas frequented by UK fishing vessels they had to abide by the rules. He said U22 was not under OPCON and was transiting to the Mediterranean. As such communications would be through SMAR via NATO.

42. He said for an undeclared submarine to operate in the South West Exercise areas they would need a Subnote held and retained by CTF311 and available for inspection. Any undeclared submarine would need allocated waters pursuant to the WPP to undertake dived operations. He said no such documents exist. He was not aware of any collisions between submarines and fishing vessels since 2004 and was aware of one incident of a net being snagged. He said all Vanguard Class submarines can be accounted for on the day of the sinking. He was unable to go into how and where and said '*I have categorically discussed all submarines that have been declared in the south coast exercise areas.'* He said he was '*absolutely unequivocal that there are no UK or allied submarines that could've been anywhere near the sinking on 15 January'.* He said the movement of a submarine would always be captured in the WPP and he was not aware of any basis on which a UK submarine would not be referred to in the WPP.

43. Accordingly, the submarines at sea on 15/1/04 have been identified and according to Commander Simmonds all NATO/allied submarines of any type, including UK Vanguard class submarines, can be accounted for at the time of the incident. No other submarines were in the south western area of the English Channel at the time, according to him.

44. A large comprehensive chart was produced by Lt. Cdr Pollitt (retired) showing the locations of some of the submarines and the areas designated for them to dive as part of ASWEX on the 16/1/04. Cdr Simmonds explained that to me. In short, he said the Fleet Exercise programme would also allocate areas for activity. Areas to the west in blue were allocated to HMS Torbay from 13/1/04 but she did not sail until the 14/1/04. The red area was the area allocated to the Dolfijn in the WPP for her to dive from 1200 to 2359 on 15/1/04. He said the majority of the ASWEX exercise took place in the deeper water within the Fleet Exercise areas. The larger red box to the NE was for the '*Thursday war'* exercise. He produced a similar chart that is also helpful.

Rear Admiral Simon Asquith

45. He is the Commander of Operations for the Royal Navy. He is accountable to the First Sea Lord for Navy operations worldwide. He joined the Royal Navy in 1990 and qualified in 1995 as a submariner. He has experience serving on a wide range of submarines, including Trafalgar and Vanguard class submarines of the Royal Navy, and an exchange deployment on Walrus Class submarines, the *Dolfijn* and one other of the Royal Netherlands Navy. He commanded HMS Talent from 2008 to 2011. He defined *allied* and *non-allied.* He said allied nations are those where we have an alliance, NATO and others where there is a close relationship, where positions are shared and movements are correctly de-conflicted. He said as a result of that, the position of allied submarines around the UK can be established.

    He said at the time of the sinking of the *Bugaled Breizh,* there were only three allied submarines at sea in the area. He said the evidence given by Cdr Simmonds that there was no allied submarine at the point of the sinking was entirely correct. He said that was correct for the all of the submarines operated by the UK, including nuclear deterrent submarines, and for all allied fleets including NATO, France and the USA.

46. He was asked about the suggestion made by Admiral Salles of the presence of a US Attack submarine or one under the control of civilian services. He said the denial as to any such involvement was entirely correct and '*I can be categoric about that'*. He said his answers took account of any US submarine under the control of anybody.

47. He said in relation to non-allied fleets, he is very confident that no non-allied submarine was in the vicinity of the sinking of the *Bugaled Breizh* in January 2004 at a distance of plus or minus 50 miles. He said the question has been looked into rigorously. He said the ability to determine that is a matter of national security and he cannot state in open court how he was able to make the statement, as it would harm the defence of the UK. His evidence on this topic was not challenged or contested in cross-examination.

48. He said he had never been on any submarine when it either was in collision with a fishing vessel or snagged the nets or trawls. He said if there was a collision with any vessel they would recognise that immediately. If there was a snagging of a net it would be more nuanced. The manifestation would be different in each occasion. He said it would be very fact specific.

49. He said when referred to the message sent from CTF 311 two days after the incident on 17/1/04 at 10.08Z to CINCFLEET, CINGERFLEET and CECLANT stating that the three submarines named with positions were the only submarines operating off the south coast of England at 12.53Z on 15/1/04 (D/10/A.277). He added '*I am absolutely 100% sure the position outlined by CTF311 on the 17th January, that there were three submarines at sea, the U22 43 miles southeast on the surface, the Dolfijn 11 miles to the southwest on the surface and HMS Torbay 107 miles to the west, dived, were the only three submarines that could have been anywhere in the vicinity of the Bugaled Breizh on 15/1/04'.* He said finally, the Royal Netherlands Navy and submarine service are highly professional and never deviate from instructions as to where to operate and where to dive as determined by Subnotes and the WPP. In other words, it is said the position was made known then and it has not changed nearly 18 years later.

50. **The other evidence as to specific submarines**:

    (i) The Dolfijn: The Walrus class submarine was the closest to the incident and responded joining the search for several hours. At the time, that is 12.30hrs, on 15/0/04 the Dolfijn was approximately 11 miles south of the incident, steering south westerly on a course of 252 degrees. She was transiting on the surface and had not been given permission to dive until she reached her designated dive

areas to the west. She responded to the emergency and changed course to sail north east. She was seen by many who also went to search.

(a) Captain Van Driel. (Read evidence Rule 23.3)

The commanding officer of the Dolfijn has died since he made his witness statement. His evidence is clearly relevant. He described his career and experience. He took command in July 2003. He gave the dimensions of the submarine. It was 67 metres in length 6 metres wide at the widest point and had a displacement of 2400 tonnes when surfaced and 2800 tonnes when diving. Maximum speeds ranged from 10 to 20 knots. He confirmed participation in ASWEX04 from the 16/1/04 to the 27/1/04.

To participate they sailed from Den Helder on 13/1/04 at 1400hrs. The voyage was of some 500nm to set coordinates specified in the order and was on the surface. He had been allocated areas to dive to carry out safety tests before the exercise. On the 15/1/04 they were on the surface sailing on course 257 at 10.4 knots. They were 'shutdown' meaning they were navigating in 'closed panel'. No-one was on the bridge navigating because of the weather. The wind was force 5 and the waves were 4-5 metres in height. Radar monitoring was possible but only to a range of 8nm. Periscope visibility was 6 nm.

At 12.53 they received a Mayday message from MRCC Falmouth indicating a fishing vessel had sunk. The name of the stricken vessel was not given. The position indicated was 49 42.12N 005 10.49W. His position was 49 32.23N 005 16.16W. The stricken vessel was therefore 12 miles from the Dolfijn. He ordered that they make contact with MRCC Falmouth and offer assistance. They stated their time of arrival was 14.00hrs. They changed to steer course 025 and 12.56hrs. They arrived at the scene to see HMS Tyne, a car carrier and the *Silver Dawn.* There was no trace of the sunken vessel or debris. The search area was divided into sectors. The search lasted until sunset and was stopped at 17.39hrs. He noted that the water temperature was 4 degrees meaning chances of survival in the water after such time were

'*zero'*. After the search they went to steer course 231 towards the exercise zone. At 21.00hrs they dived.

He then went on to describe the ASWEX exercise commencing the following day the 16/1/04 until 27/1/04. They arrived in Cork on the 28/1/04. They arrived back at Den Helder on 20/2/04. He said the Dolfijn suffered damage in Norway on 21/4/04 and returned to her home base for repairs. That was the only damage suffered from 15/1/04. He ended by saying he had no idea what was or could have caused the tragic accident. They were operating by radar at 8 miles range at the time and could not see much.

(b) Two additional statements were read pursuant to rule 23 from Officers of the Royal Netherlands Navy who were on board the Dolfijn on the 15/1/04.

(i) Phillipus Hol is currently the Head of the Netherlands Submarine Commanders course. His statement dated 13/10/21 is in the form of answers to question put by the solicitors to the inquests at the request of the families of the victims. He confirmed that, as far as he could recall, the Dolfijn was about 10nm from the position of the incident. He was on duty as the Operational Department Head at the time. The Dolfijn was being navigated from the control room. He recalled receiving a Mayday signal from Falmouth and heading towards the position of the *Bugaled Breizh*. He recalled VHF communications with other fishing vessels and a UK patrol vessel when they assisted in the search. He said the reference to the *Eridan* in the log was an error. He confirmed the Dolfijn was surfaced on arrival at the *Bugaled Breizh* and had been for the whole day prior to her arrival at the exercise area. The first dive was a great distance from the site of the sinking. He said they were heading west when they received the call and changed course to north. He concluded that if the signal was at 12.53 that was when they changed course.

(ii) Erwin Ruijsink is the current Chief of Staff of the Royal Netherland Navy Submarine service. His statement arises from the same questions as the previous witness. At the time he was one of the Principal Warfare Officers on board. He recalled being told of the distress call in their vicinity. He advised the Commanding Officer to join the search. At the time he was not certain the incident concerned a sinking. He recalled the Dolfijn communicating with Falmouth to render assistance. He too said the Dolfijn was surfaced at arrival at the scene.

(c) Captain Van Zanten of Royal Netherlands Navy

The Captain was not on board the Dolfijn at the time, however, he was a serving naval officer in 2004. He is undoubtedly very experienced in all aspects of submarine operation and exercise planning serving on submarines from 1991 to 2015. He has served in all ranks, including in command. He served on the Dolfijn as Executive Officer, which is second in command. He ceased commander roles in 2006. His current role is as the Group Captain of the submarine service. As such, he is responsible for the overall preparation of a submarine so that it can go to sea and is safe to operate.

He gave evidence concerning the general procedures of the Netherlands submarine service and he explained the Dolfijn's log from January 2004. He had the original log with him when he gave evidence. He understands that a submarine can be a danger to a fishing trawler if near to it. In 2004 the Dolfijn was under UK control at the time and so she would follow UK procedures. He said the transit of the Dolfijn in January in 2004 as part of the ASWEX exercise was surfaced and so would move on the surface only. When on surface, in transit the submarine will follow the rules of the road as any other surface vessel would and keep safe distances from other vessels. If dived and within 1500 yards of a fishing vessel they would surface. Conversely, if a submarine was about to dive it would communicate with fishing vessels in the vicinity. If there was a collision, the submarine would reduce speed to zero and undertake a static careful rise to the surface

and investigate the situation in order to save lives. They would also report to the Coastguard of the operating authorities and in the Netherlands.

He confirmed the evidence of Captain Van Driel. The Dolfijn left Den Helder to go to the ASWEX exercise on 16/1/04, a distance of about 500nm. On the 15/1/04 she was sailing a defined route from 08.45 on the surface, at a speed of 10 knots. The Dolfijn picked up the Mayday message and gave her position as 49 32 N 5 16 W, which the crew calculated to be 12 nm away from the given position for the emergency of 49 42N 5 10 W. The Dolfijn messaged to say she hoped to be on scene at 14.00hrs. She arrived and searched until 17.39hrs when the search was called off. The Dolfijn then went to her allocated area and dived at 21.00hrs. She participated in the exercise from the 16/1/04 until the 27/1/04. From his review of the log, he had no reason to disbelieve the evidence of Capt. Van Driel. He said as the Dolfijn was transiting, it was not doing anything unsafe, improper or incorrect.

The log shows the voyage on the 14/1/04 and 15/1/04 (Supp 3/74/A.1714/5). The overall route was from Den Helder to Cork. The Dolfijn left Den Helder on the 13/1/04. The watch notes show from midnight on the 15/1/04 to 06.00hrs that day and from 06.00hrs to 12.00hrs she sailed essentially a straight line course of 252 or 255 degrees (south westerly). At 13.00hrs the course changed to 024 and rather than going SSW as she had, she was then going NNE. That was consistent with her change of course in response to the emergency. He explained other entries in the log: column 10 was the speed, 19 to 21 was the level of readiness including at 19 the depth, 29 the hours dived and 21 navigation. Because the letters 'BW' (surfaced) and 'OW' (underwater) were marked with a line or dash it meant the submarine was on the surface.

He said the entries show that the weather was quite rough and so the Dolfijn was sailing '*shut down'*. The weather meant it was unsafe for the Officer of the Watch to be outside the submarine and so the upper hatch was closed with navigation taking place from inside. Importantly, he said, although the

upper hatch was closed, the submarine cannot dive. He said there is a physical obstruction to diving involving steel pins and electrical systems that have to be operated before the submarine can be ready to dive and so the phrase '*shut down'* does not mean ready to dive. The log also referred to variable courses and speeds consistent with searching.

The note at 13.00hrs refers going to the *Eridan* and the course sailed. Therefore, he said, the records show the Dolfijn was going to the position where a trawler was overturned. The next entry noted in the log is the Dolfijn's own position at 12.53hrs. That was in response to a message requesting the Dolfijn to record her position at that time. The log notes that searching for five missing persons took place from 14.00hrs until 17.39hrs.

It is a fact to note that despite requests for a member of the Dolfijn crew on the 15/1/04 to give live evidence in these inquests, no witness has been provided. Capt. Van Zanten was aware of the request being made but said he could not comment on the legal decision of his Admiral. He said the radio communications from the day would have survived for a time but would have been destroyed after a period of time. He said there was no way of knowing the position of the Dolfijn at the time of the incident from the log. He said, however, to obtain the position at 12.53hrs as requested, the crew would be able to take the position from the charts used to plot the course taken as they would be marked every 10 minutes or so during the transit. He said the navigation was done by GPS that was highly accurate. He said if a fishing vessel got snagged by a submarine it would be impossible for the people on board not to know about it. He said if an officer made a false entry in the log and wrote that the submarine was on the surface when it was in fact dived and thereby falsified the log it would mean a Court Martial. He said he had never experienced such a thing. If there was an error in the log that would be raised. He said finally '*it is unthinkable…it would not happen and would be regarded even in a junior officer as a major flaw'*.

(ii) HMS Turbulent

(a) Rear Admiral Simon Asquith

He was a member of the crew from September 2003 to 2006 as the Executive Officer. He was therefore a member of the crew on the 15/1/04 and was able to give evidence as to her movements at that time. He gave an account consistent with that given by Commander Coles. On the 15/1/04, he said, she was alongside in Devonport and had been there since November 2003.

On the 16/1/04, he said they sailed in the morning from berth and proceeded to Plymouth sound. There they deployed drogues to a stud cable, as the intention was to undertake degaussing. The drogues keep the stud cable buoyant. Once the drogues were deployed, they went south of the breakwater to the degaussing range. When they arrived, they were told the range measure magnetic signal (tester) was unserviceable. He said they '*loitered in that position waiting for that range to be rectified'*. He described the weather as poor, squally with showers. He said the CO gave the navigator instructions to stay clear of shipping lanes. At about 1300, the navigator called the Captain to tell them that when a squall passed it had blown the drogues and / or cable towards the submarine and that had caught the propulsor. There was concern that if the submarine went back into the breakwater, they might damage the stud cable that had been caught. He described the arrival of a tug, a second tug and the attempts to attach the submarines to the tugs by lines. The intention was to be attached to a buoy to enable a diver to investigate. He described the damage to a cleat, a man overboard and the fact that the correct decision was taken by the Captain to risk damage to the cable and to get back to the breakwater and secure the submarine to Delta buoy. He said the submarine stayed there overnight and went back to Devonport on the 17/1/04. The repairs were carried out and HMS Turbulent sailed for the ASWEX exercise on 19/1/04. He said he had referred to records of the incident before giving evidence but he had an independent recollection of the incident saying '*it was not our finest day…. that was a day which stuck in my memory…we lost a sailor overboard and we caused damage to the submarine and we had a delay to our programme, so it was memorable perhaps for all the wrong reasons'.*

He was asked about the log for HMS Turbulent and the investigation report (Supp 2/31/A.971). The log for the 15/1/04 shows blank columns for that day. He said that signifies it was not moving and it was alongside, and the other entries are consistent with preparation work the day before sailing. The log shows on 16/1/04 until 0800 they were alongside and that they sailed at 0900hrs. A separate entry for 1200hrs notes the drogues being caught. At 13.51 the '*man over board'* is noted. At 15.01 the log records they were tied to Delta Buoy. The submarine went back to Devonport at 1400hrs and was alongside (Supp 2/31/A.973). HMS Turbulent sailed again on 19/1/04 at 1400hrs (Supp 2/31/A.975).

He said there was '*no way'* HMS Turbulent was operating outwith her water allocations or the plan for ASWEX. He said, having looked at the documents, there was no indication that HMS Turbulent was anywhere other than alongside Devonport on the 15/1/04. The message sent on 16/1/04 at 2204Z, stating regret at not joining ASWEX, he said confirmed what he had said in evidence (Supp 3/65/A.1675).

(b) Commander Andrew Coles

He left the Royal Navy as a Commander, the rank he also held in 2004. In 2004 he was the Commanding Officer of HMS Turbulent, a Trafalgar class submarine. He had held that post from July 2003.

He said that on the 14/11/03, HMS Turbulent returned to Devonport, they had been at sea for 2 months. There had been a programme change and they returned to take leave and for maintenance before leaving for 6 months. He said HMS Turbulent was in Devonport until the 16/1/04. The week commencing 12/1/04 was a harbour training week when they did exercises to make sure all was ready to go to sea. On Thursday 15/1/04 they were storing the ship alongside i.e. in port. He said HMS Turbulent left port on the 16/1/04 at 0900hrs.

He was taken to the log for HMS Turbulent (Supp 2/31/A.955). That day, HMS Turbulent was at berth 8 wharf south (Supp 2/31/A.971). On the 15/1/04, HMS

Turbulent gave her position in response to the CTF311 message at 12.53 and the position given was alongside in Devonport.

He then gave a detailed account of the events of 16/1/04. He said the day began at 8 wharf south. HMS Turbulent did not move until 0900hrs. He said they sailed to Plymouth Sound by 10.00hrs and were at the degaussing range at 10.30hrs. He was then informed that the range was not functioning. They had been towing a stud cable with drogues. He was informed that it appeared as if a drogue was vertical between the rudder and propulsor. He was unable to tell if the drogue was snagged. They called for assistance and tug Faithful was on standby to help. A police boat and a pilot boat were also sent to help. His plan was to be towed backwards and to send a diver to see if there was a snag or not. There was a sea swell with squalling winds. He had little space to the east due to the wind and tide. He then described the attempts made by the tug to secure a line to the forward cleats. The first attempt caused the rope to break. A wire was then used, however that broke the cleat. Two crew members were sent to take a line and attach it to the centre cleat. The wire was cut again. Another line was secured, however a wave took the two crew overboard. They both survived, however, one was in need of hospital treatment having been in the water for 7-8 minutes. He was recovered by the Police boat. The submarine was eventually secured to Delta Buoy to assess the damage. Eventually, the drogue broke free and was recovered. The stud cable was free of the propulsor, however with three broken cleats, repairs were necessary. HMS Turbulent returned to Devonport the next day due to the tides. The repairs were completed in 48 hrs. On 19/1/04 HMS Turbulent sailed to take part in the ASWEX exercises. At 1504hrs that day they dived for the first time.

He confirmed entries in the log for the incident until the 19/1/04 (Supp 2/31/A.972-6). He was referred to the investigation into the incident and his signature (Supp 3/38/A.1077C-D). Finally, he was referred to other documentation; photographs of damage (Supp 3/38/A.1077J), the list of the personnel interviewed including Rear Admiral Asquith as the Executive Officer (Supp 3/38/A.1077L), a signal from HMS Turbulent at 16.45hrs on 16/1/04 summarising the incident (Supp 3/38/A.1078), a signal at 18.05hrs on 18/1/04

describing the repairs undertaken (Supp 3/38/A.1080), a message from HMS Turbulent indicating the vessel sailed at 0900hrs on the 16/1/04 (Supp 3/65/A.1671), a report of the incident (Supp 3/65/A.1672), a description of events (Supp 3/65/A.1673) and a message from HMS Turbulent at 22.04hrs stating regret that they were unable to join the ASWEX exercise (Supp 3/65/A.1675).

He said he had some memory of the ASWEX tasks set for HMS Turbulent. He said they were to do basic serials with the French submarine *Rubis* and then given a wider ability to be the enemy for surface ships. However, because they were late arriving, the water that had been allocated was not available and so HMS Turbulent did not become involved and they had to leave the exercise before the end. A signal is a Subnote change from CTF 311 (at D/9/A.244). It changed the start time to move from one area. It was sent on the 15/1/04 and refers to the 24/1/04. He said HMS Turbulent was definitely not involved in the *Bugaled Breizh* incident, as she was alongside at the time.

He said if a submarine collided with a vessel you would know instantly and if there was a snagging of a net you would also know pretty quickly from the sonar and noises from the wire on the side of the hull. He said he had no experience of such events saying '*it is a very rare occurrence',* adding he had never been on board when a trawler was snagged. He said that an answer given in Parliament as to the movements of HMS Turbulent that she sailed on the 19/1/04 for Gibraltar was '*not entirely correct'* (D/10/A.351). He said they sailed on 19/1/04 and went to Gibraltar later in the month.

He said he had, sometime later, met M Lemetayer a relative of M George Lemetayer who died and did his best, given the language difficulties, to reassure him he had no responsibility for the loss of the *Bugaled Breizh*.

The Royal Navy investigation: Mr Andrew Billings

51. In 2004 he was an officer in RNPSIB and formerly the RNSIB. (Royal Navy Special Investigations Branch) The role of the RNSIB was to investigate serious crime by Royal

Navy and Royal Marines personnel anywhere in the world. They also assist civilian investigations. When he left the RNPSIB in 2017 holding the rank of Lt. Cdr, he was the Officer in Charge. These bodies are independent of the Royal Navy hierarchy.

He has conducted a number of high profile and complex investigations, including an explosion on HMS Tireless and inquest proceedings that led to criticism of the MOD. In this case, he carried out investigations in order to assist the French investigations into the sinking of the *Bugaled Breizh*. After the sinking of the *Bugaled Breizh*, the Devon and Cornwall police investigated at first, followed by the MAIB. He said the RNSIB picked up the case sometime afterwards. The police took witness statements. The Maritime and Coastguard Agency (MCA) were involved too. In parallel, the French investigation began including the police and BEAmer, the French equivalent of the MAIB. He thought their first contact with the RNSIB was in May 2005. In September 2006 he saw '*a pack',* meaning documents that had been circulating in departments in the MOD, with requests from the French with some correspondence dating back to 2005. He was shown a letter from Fleet command dated 24/5/05 to French authorities giving information (S/42/A.200). The letter states the location of submarines (The Dolfijn, FNS Rubis, HMS Torbay and HMS Turbulent), and that the '*Thursday war'* exercise did not involve submarines and information about helicopter activity.

He was shown a RNSIB report 53/06 dated 18/12/06 (S/43/A.203). The report stated that the RNSIB was tasked by the HO to assist with a supplementary Commission Rogatoire from the French Government concerning the sinking of the *Bugaled Breizh*. He said the RNSIB carried out enquiries to comply with the requests made but did not know the extent of the French investigation. The report was completed three months after tasking. The report is divided into sections (missions), representing the separate requests made and the answers or evidence obtained. He said the work undertaken was evidence gathering. I need not set out all requests and responses (S/43/A.206).

Mission 1 was answered, with the locations of HMS Torbay said to be 80-100 nm away from the scene and HMS Turbulent and HMS Trafalgar reported to be in Devonport (S/43/A.206). Commanding Officers' statements and Logs were provided for two of the submarines, however, the log for Turbulent could not be found (S/43/A214-231). The

request asked for the locations of submarines not involved in ASWEX manoeuvres. Missions 4 and 5 concerned the sinking of the life raft. Statements were provided from the aircrew concerned and Mr Bielby. Mission 6 concerned all helicopter crews involved and statements were provided.

A supplementary request from EUROJUST dated 2/10/06 concerned the messages for the ASWEX exercise and '*Thursday War'*, the allocation of exercise areas and the transit of submarines in the SCXA and SFXA. Evidence was supplied, including a detailed statement from Lt Cdr Pollitt and signals from CTF 311 and the WPP for the 15/1/04 (S/43/A.324 and S/43/A.287). He said it was discovered later that the file provided was not the final WPP programme, as it is a document that is changed quite often. The information, however, concerning operating areas was correct. One folder contained 189 pages and included Subnotes and signals (D/10/A.247). Also provided was a sanitised DFC narrative for the sinking (S/44/A.211 and D/11/A.387). That included, dated 16/1/04, the names of the three submarines at sea and their positions and distances from the incident, namely, the Dolfijn 8 miles surfaced, FGS U22 43 miles dived and HMS Torbay 101 miles dived. The report incorrectly stated that the Dolfijn had recovered 2 survivors. In addition, the report also referred to HMS Turbulent and her incident with the drogues on the 16/1/04.

An addendum report was provided dated 17/10/07, reporting that the log for HMS Turbulent had been located and so that was forwarded (S/44/A.329).

There was a further addendum report dated 4/9/07 with answers to more requests (S/45/A.338). Many requests had been answered previously, it transpired. Mission 1 requested the vessels comprising T.G. 603.01 that were engaged in the Weekly war exercise (*Thursday War*) for 15/1/04. That information had been provided in December 2006. Mission 2 requested the Subfax message sent to those in the area of the sinking. The Subfax was supplied (S/45/A.372). The message relayed, at the relevant times (0700 to 1300), the areas where dived submarines would be active in the Plymouth exercise areas and identified those areas by letter and number code (S/45/A.373). Importantly, the areas specified did not include area D1 where the *Bugaled Breizh* sank. Mission 3 related to HMS Torbay's position. There was an error in a message CECLANT as explained by Lt Cdr Pollitt in a further statement. Mission 3 related to

the position of HMS Torbay. The position had been provided earlier. There was also an error in a message to CECLANT of 15/1/04 at 18.44hrs. That was explained in a statement from Lt. Cdr Pollitt (S/45/A.350).

A second letter of request was responded to by a report dated 4/9/07 (S/45/A.338). Mission 1 was answered with the signal allocating areas to HMS Torbay of 13/1/04 at 1422Z. Mission 2 requested further statements from the aircrew of R169 concerning the life raft. They were obtained and provided. The third request concerned the identity of submarines seen north west of the Scilly Isles on 21/1/04. A further statement from Lt. Cdr. Pollitt explained that there was an exercise in the area with dived submarines. None were surfaced at the time.

EUROJUST lodged further requests in December 2007. A report was compiled dated 24/1/08 with answers and evidence (S/46/A.380). Mission 1 asked for all units tasked in TG603.01 and a list was provided with a witness statement (S/46/A.385). No submarines were tasked or involved. The mention of a submarine in the final column was explained as a reference to the activity undertaken, namely, an exercise concerning a large vessel under attack from a submarine. This evidence was given by Commander Simmonds. Missions 4 and 5 concerned the locations of HMS Trafalgar that had incorrectly been stated to have been involved in ASWEX, and HMS Triumph. The latter was shown to be alongside in Devonport at the relevant time on the berthing log (S/46/A.390). This document shows no movement by any submarine named on the 15/1/04.

Mr Billings attended a meeting in The Hague on 19/2/08 at EUROJUST. He was part of a team of four from the UK. Commander Beard from the Royal Navy was present and described as a *Submarine Scheduler*. He said there was a loose agenda and the UK attendees were not expected to give detailed evidence and had no advance notice of requests. He said there might have been different expectations on the part of the two sides attending. He was there to find out what EUROJUST were interested in. The note of the meeting provides the questions and answers given (D/9/A.225). Mission 9 referred to a submarine seen in Falmouth Bay on 14/1/04. The answer given was that HMS Torbay was indeed present then. The note refers to '*However we cannot say that there were no other submarines in the area on that day. We can try to search the WPP*

for 13, 14 and 15 January 2004, but we are not sure we can give you a satisfactory answer'. Mr Billings said the Royal Navy expert gave that answer. The QHM documents had been provided. He said he was satisfied that they had proved there was no UK asset in the area at the time of the sinking. He said the meeting was '*quite inquisitorial'* and because they did not have the material they would have to go back and see what evidence they had. The note ends by recording the Royal Navy will provide additional answers within 3 to 4 weeks.

A final report was submitted dated 7/3/08 (S/47/A.397). This followed a further series of requests following the meeting in February 2008. Graham Cudmore produced an official copy of the WPP for 12-16/1/04 including the units involved in the '*Weekly war',* as he described it (S/47/A.400). In his statement he refers to a '*spurious copy'* as serial numbers in an exhibit MCY/53/12/09/01D differ from the official copy he produced and the list in exhibit RAG/53/21/1/1, which is a planning document that is not published as part of the WPP. Mr Billings was not concerned by the use of the word '*spurious'.* He said the word did not mean any malintent or dishonesty, it was not suspicious. If he had thought the document had been adjusted to mislead he would have commenced an investigation. Mr Billings said '*The WPP is a live document and therefore can get amended as it goes along'* he explained that it was *'a standard practice that a document will be changed and amended as it went along'.* Mr Billings added the WPP versions were identical regarding submarines and there was no material difference. Therefore, it did not change his view of the investigation. Later he said 'spurious' can mean fake or forged. He said, finally, the word might mean a message that is '*unexplained or anomalous'.* He said he did not *'hold any weight on it being a suspicious document in any way shape or form'.*

He said his team did not uncover any evidence that a submarine was involved. If they had found evidence of military involvement, they would have investigated it. He said there was no submarine within 5 nm of the *Bugaled Breizh*. He said he did not have authority to investigate Dutch or German boats but if he had discovered foreign involvement in the sinking, he would have raised it as a concern and escalated it up through the chain of command. He said there was no evidence pointing to foreign involvement. He said if they had received the Letters of Request earlier, they would have been able to do a more thorough investigation. Given the time lapse and the

parameters set, he said the team did a reasonably good job. He said some witnesses were overseas and there were a lot of challenges. He said now the system is more efficient with a single point of contact.

The BEAmer report, French court proceedings and findings

52. The report on the technical inquiry into the *Bugaled Breizh* was completed by *Bureau d'enquêtes sue les évènements de mer (*dated November 2006). It is known as the BEAmer report. It relates to the technical investigation that is carried out after a marine casualty, in accordance with French law. The analysis performed was not carried out to determine or apportion criminal responsibility nor to assess individual or collective liability. Its sole purpose was to identify relevant safety issues and thereby prevent similar accidents in the future.

53. The absence of any survivor or a witness, led the investigators to gather as much information as possible and to compare the available evidence with various conceivable hypotheses. Initial investigations and video film were made three days after the incident by underwater cameras from a French vessel. Later, in July 2004 when the wreck was recovered, more video was made and available from that exercise. Thus observations were made of the trawl rig in situ. BEAmer described these as '*crucial*'. A model of the trawl rig was made.

54. BEAmer provided the main characteristics of the vessel being an overall length of 23.85m, a breadth of 6.6m and gross tonnage of 103.93 tonnes. The *Bugaled Breizh* was built in 1987.

55. The vessel was designed as a fishing vessel operating as a bottom stern trawler. Initial stability documents were drawn up using those of an almost identical trawler the *Ravel*. The two vessels had different engines. Initial stability documents were approved and initial freeboard certificate was issued and then renewed annually. The *Bugaled Breizh* underwent an engine retrofit in 1999. In order to comply with stability regulations, four tonnes of ballast was removed. Thereafter, the stability characteristics were almost identical for the two vessels. No issues were taken as to the vessel surveys and certification.

56. With regards to fishing gear, the vessel was fitted with two winches on the freeboard deck abaft the work room. The winches were hydraulically driven but were not of the self-tensioning type. The drums were connected and disconnected by the movement of the hydraulically operated claw type clutch. The tension of the warps was measured mechanically and there was a warp tension indicator in the wheelhouse with an alarm, which was set off if a four tonne limit was exceeded. There was no warp tension recording equipment nor were there any means of decreasing the tension. The controls of the winches and brakes of the warp drums were grouped together on a control panel in the aft part of the wheelhouse. The winches could be controlled locally by means of handheld control boxes around the winches themselves. The trawl rig comprised warps with a nominal diameter of 22mm and the nominal strength of 27.8 tons. The warps had a length of around 1200m. On each of the warps 600 m had been renewed in November 2003 The new part of the warps was wound onto the winch drum at the time of the accident. The report sets out the various component parts and connections to comprise the French trawl rig. The images bundle at pages 5, 6 and 9 assist in understanding the various component parts (although it should be noted only page 5 shows the layout of the actual rig used by the *Bugaled Breizh*). The otter boards were made of wood, were rectangular in shape, 2.5m in length and weighed about 800 kg. The otter boards were used to hold the mouth of the trawl net open and during fishing operations they were about 50m apart. During fishing operations the trawler net had a horizontal opening of 18m and a vertical opening of 4m.

57. The report found that the vessel was equipped with two 8 person class I life rafts, located on either side of the upper deck. They had been serviced on 7/5/03. The crew were all suitably qualified, certificated and medically fit. When recovered, one of the life rafts remained in situ and was not released.

58. BEAmer undertook stability calculations based on a number of possibilities, in particular, in the event of various parts of the vessel becoming flooded. The calculations appear from page 46 of the report. In particular, stability was lost when the crew quarters were flooded.

59. The fishing gear was analysed, including the winches and net drums. The inspection of the wreck showed that the two winches were de-clutched with the clutch jaws aligned.

When divers working on the re-floating operation went to the wheelhouse they observed that the port winch brake lever on the winch control console was in the off position.

60. The general arrangement of the site showed the wreck was lying on the sea bottom with her bows towards the south-east. The trawl net was lying roughly a south-west north-east direction. The distance between the mouth of the trawl and the stern of the vessel was 415m. Underwater images showed that the spread of the trawl net was smaller than in normal operation with the two upper wings being only a few metres apart.

61. The investigators considered a number of hypotheses, including the flooding of the compartment below the freeboard deck, a collision with a surface vessel, snagging of the trawl gear by a submarine, snagging of the trawl gear on an obstacle on the sea bottom or the trawl gear burrowing into the seabed. In summary, they concluded that the most plausible explanation was that of the embedding of the fishing gear in the seabed. The investigators gave their reasons for this explanation in combination with other factors, including the weather and the influence of the trawl gear on stability.

62. They concluded that the weather conditions and the nature of the seabed in themselves did not cause the accident but they did create the conditions in which the accident could take place and therefore they were incidental factors which contributed to the accident. In the prevailing conditions, the interaction between the trawl gear in the sea bottom led to a reduction in stability, which was amplified by the sea state to such an extent that there was a total loss of stability. Investigators concluded that was a decisive factor in the accident. A second decisive factor was that the loss of stability was only made possible by the existence of a number of other conditions connected with the vessel; the fact that the breakwater door and the door to the crew's quarters were kept open, the fact that the engine and propeller were kept in ahead operation and the fact that only the port warp was slacked away.

63. In rejecting the possible hypothesis that the fishing gear was snagged by a submarine, they concluded that snagging of the trawl net was impossible given where the trawl net was used when fishing and given it had not sustained considerable damage. Snagging of both warps would cause the trawl net to be lifted off the bottom before the vessel

itself was affected, whereas the chains of the upper and lower bridles and the three-way connection were found embedded in the seabed. In addition, if both warps had been snagged they would have finished up in similar positions but the starboard warp was found rather taught while the port warp had made wide loops in three different places. They rejected a snagging of one warp only, since if the movement was towards the outside of the trawl rig then the trawl door and wing on the side snagged would have moved outwards, whereas the opening of the trawl net was found to have closed with the trawl doors being only 5m apart having swapped sides. If the movement was towards the inside this would have led to a reversal of the trawl doors and probably the crossing of the wings of the trawl net as well but that did not correspond to what was observed. In that scenario, the overlapping of the port bridle and fork leg cannot be explained. In both cases the warps would not have been found lying almost parallel to each other between the trawl doors and the vessel. Finally, the metallurgical analysis of the warps did not bring to light any abnormal strains which could have been caused by a submarine and the traces observed did not allow any coherent conclusions to be reached. Therefore, BEAmer concluded that a submarine snagging the trawl net was inconsistent with the material observations of the trawl rig.

The French court proceedings and expert witnesses

64. In the course of the inquests hearing, reference has been made to the judgments of the French courts and the conclusions of the French court-appointed experts. In that regard, I make a number of preliminary observations. Firstly, this evidence is in principle admissible, however, I can only rely on this evidence if it has been properly adduced during the inquests. By this, I mean that it has been orally adduced during the inquests hearing, either by virtue of being put to a witness during their evidence by way of oral questioning or by being read into evidence pursuant to Rule 23 of the Coroners (Inquests) Rules 2013. Secondly, where such evidence has been properly adduced, I note that I am not bound by any of the conclusions of the French courts or the French court-appointed experts and I may, on any given issue, decide to reach a different conclusion based on all the evidence I have heard. Thirdly, I note that the French courts were considering potential criminal prosecutions for offences including manslaughter, and therefore they were exploring different issues to these inquests. Fourthly, I note that not all of the French expert reports were translated into English. I can only take into account those reports that were translated and were properly adduced in these

inquests. Finally, I should add that in this summing-up I may quote some passages in particular from the French court judgments which may extend beyond the passages of text quoted in the course of the evidence. Where I do so, this is purely to provide context for the evidence. Throughout, I have been careful to ensure that my conclusions are based only upon evidence properly adduced in the inquests.

65. On 02/07/10, the investigative chamber of the Rennes Court of Appeal considered the matter (D/13/A.420). Earlier proceedings had been conducted by the investigating Magistrate of the Quimper Regional Court, who refused an application for further investigative action. The application before the court in 2010 was for a further investigation to be undertaken by Admiral Salles, concerning whether there were objective reasons to conclude that a nuclear attack submarine was present at the time of the incident. An early report by him was before the court by an order dated 16/08/06.

66. The court considered expert reports by Mr Troyat, the systems and network engineer specialising in maritime and general mechanics and Mr Georges and Mr Theret reported on the fishing gear as technicians from the Department of Fishing Technologies at IFREMER. Other reports were also considered, including the BEAmer report of November 2006. The court analysed the reports and the conclusions. Mr Troyat in his third report dated 26/06/07 stated that a fishing accident was the most likely cause of the sinking. Mr Georges and Mr Theret concluded in their initial report that an exogenous force was the cause, i.e. a submarine. Mr Theret submitted further reports in June and October 2007 following tests conducted by LNE (the French National Test and Metrology Laboratory) that had ultimately concluded there was no significance between the two warps in terms of irregularities found, as both warps exhibited the same type of damage. Traces of titanium that could not be explained by the sea environment were detected in both warps where the damage occurred and elsewhere in the case of the starboard side. Mr Theret, in his two reports, confirmed his belief that the sinking had been caused by an exogenous force.

67. As a consequence, the investigating judges engaged Admiral Salles to report by order dated 16/08/06. His reports are dated June 2007 and July 2008. In his first report he concluded that none of the submarines named in these proceedings were involved in the sinking. He accepted that the HMS Turbulent was in Devonport at the time. He

concluded that it was not possible to definitely state that other submarines were not present in the English Channel. He said that such a submarine would be from a non-NATO state or a vessel from a NATO state member operating in breach of internal protocol.

68. His second report of July 2008 contains a passage that is accepted has not been interpreted correctly. He stated "*the narrowness of the area, the shipping density, the proximity of coastlines as well as the presence of naval bases and latent threat of detection by the security apparatus of states within the region are all factors that suggest that if a submarine was present in the English Channel it cannot have been a submarine carrying out a deterrence mission".* He went on "*the evidence would lead one only to consider within the bounds of probability the possible presence of a nuclear attack submarine. Apart from the United Kingdom and France, only China, the United States and Russia have this type of submarine capability and thus could be called into question. The distance from the scene of the accident would reasonably lead one to think that it is not an area in which a Chinese submarine would be deployed"*. Investigating judges on 31/7/08 stated that, in their view, only the actions of a submarine help provide a coherent explanation in view of the case file evidence. Secondly, to conduct investigations pursuant to establishing the position of nuclear attack submarine seemed unrealistic and therefore they served a notice of the end of the investigation. Notice was given the end of the investigation on 19/08/08.

69. An application was therefore made on behalf of the complainants for further investigative measures to be undertaken. On 27/11/09, before ruling on all requests, the court ordered an additional report to be undertaken by Admiral Salles requesting him to consider whether objective grounds existed concerning the presence of one or more nuclear attack submarines in the area at the time of the sinking. The witness provided a further report dated 31/3/10 where he stated that there were no unusual events on the day in the area which could justify the presence of a nuclear attack submarine of any nation and said "*there was however an objective reason for the presence of an American nuclear attack submarine in the western half of the English Channel, which includes the area where the Bugaled Breizh sank on 15 January 2004: on 19 January 2004 a loading operation involving vitreous nuclear waste material was scheduled to take place in Cherbourg for onward transport to Japan. This operation would proceed a*

non-routine unloading of nuclear material loaded in the United States". The court decided that it would be appropriate to ascertain whether there was a U.S. Navy submarine in the area at the time and made an order that a request must be made to the American authorities to indicate the position of its nuclear attack submarines at the time of the sinking. I note that the translated decision of the court refers to 12 January 2004 at 1200Z (D/13/A.450). I can only assume that is in error and proceed on that basis of the correct date being 15/1/04.

70. The matter came before the Investigative Chamber of the Rennes Court of Appeal on 13/05/15 (D/14/A.452). By way of procedural history, on 25/10/12 the Rennes Court of Appeal concluded that there were no grounds for that Court to consider a further appeal against the earlier order rejecting the application for further investigations because the issues raised had already been determined in its judgement of 2/7/10. Further, a ruling of dismissal was made on 26/05/14 by the Investigating Judge of the Nantes Regional Court hence the matter was back before the Court of Appeal. The court once again considered the available evidence and expert reports that had been considered earlier.

71. Following the decision of the court in July 2010, international letters Rogatory dated 10/3/11 were sent to the relevant authorities in the United States of America. The question posed was to ascertain if any US Navy nuclear attack submarine was present in the English Channel or its opening i.e. within 100 nautical miles of the scene of the sinking of 15/01/04 at 1200 UTC. The response from the United States Navy director of intelligence operations for Europe-Africa was in the negative following inspection of the relevant U.S. Navy logbooks regarding the presence of a U.S. Navy submarine within 100 nautical miles the scene of the sinking.

72. Admiral Salles was asked to prepare a further report following a ruling on 9/7/12 principally concerning the location of HMS Turbulent at the time. He confirmed that HMS Turbulent was docked on 15/1/04. He also quoted from correspondence addressed to the Court from September 2012, in which he explained that there was no reason to cast doubt on the response of the US authorities regarding the absence of the submarines in the area of the sinking.

73. On 19/4/13, a request for an additional expert report was refused and as a result Admiral Salles was questioned as a witness. In summary, he said there was, in his view, reason to believe the U.S. Navy had responded in good faith that it had no submarines in the area but went on to suggest that an intelligence agency could position submarines outside the control of the U.S. Navy to oversee transport of nuclear material. The Court concluded "*the theory of Mr Salles regarding the presence of a nuclear submarine in the area to oversee the conditions for loading nuclear material at Cherbourg is not supported by any objective evidence, but is based on the premise of involvement of a submarine in the sinking of the trawler while making reference to a prior incident involving the U.S. Navy recounted in a book. Despite the intellectual fragility of this argument, instantly rejected by one of the complainants, the US authorities have been questioned and have responded in the negative stating that no U.S. Navy submarine was within 100 miles the scene of the sinking. In the presence of this clear response that no objective evidence can call into question it would be futile to once again question the US authorities on this matter. In any event as the enquiry stands it can only be found, as the senior judge has indicated, the cause of the sinking of the Bugaled Breizh could not be established with certainty: fishing accident or submarine intervention. Therefore should it yet be revealed ten or more years later by any means whatsoever the submarine was present in an area close to the sinking no material evidence is likely to prove its involvement"* and "*the enquiry has therefore not brought to light sufficient evidence to allow one to characterise the offences for which it was launched, or any other offence, and no additional investigation that could be opened is likely to prove valuable"* (D/14/A.500). Accordingly, the court upheld the ruling of dismissal delivered on 26/5/14 by the investigating judge.

74. The court had noted "*it was also possible to determine in this way that the Thursday war exercise did not include submarines and to determine that the position of submarines of all nationalities scheduled to participate on the UK-led ASWEX 04 exercise that began on 16/1/04, the day after the sinking, none of which were in the vicinity of the trawler when it sank"* and "*in any event, while all studies and reconstructions render genuinely reasonable the theory of a fishing accident due to the culmination of aforementioned factors the fact remains that the enquiry could not establish any other compelling evidence that could verify this theory with certainty and thereby cause all other theories to be rejected."* (D/14/A.498 and A.496). I note the use

of the word *certainty* to denote a higher standard of proof than operates in these inquests. One more akin to a criminal standard and potentially higher that '*being sure'* used in UK Courts. The inquests engage the civil standard: on balance of probabilities, that is what is more likely than not. I do not have to be 'sure' or 'certain'.

75. Finally, the matter came before the Cour De Cassation (Court of Appeal) criminal division on 21/6/16 (D/8/A.207). The Court dismissed the appeals having concluded that the investigation was complete and that there were no adequate charges against anyone for having committed the crimes alleged or any other infringement. The Court noted the conclusion of the President of the Investigation division that the investigation in no way demonstrated the possibility of the involvement of a submarine and consequently new questioning of the American authorities about the possible presence of United States submarines in no way served to discover the truth. The Court acknowledged the full co-operation of the British authorities in the investigation. The Court added '*the multiple, complex and meticulous investigations over more than ten years both in France and abroad have not allowed the identification of the causes of the loss and that no additional investigation appears like to serve to discover the truth'.*

Captain Soomro

76. Mohammed Yusuf Soomro is a marine accident investigation expert instructed to provide evidence for these inquests. He confirmed that he was not instructed to perform the original tests and examinations carried out by the French marine accident investigation branch BEAmer. He was instructed to summarise the BEAmer report and then comment on its conclusions and to give his own views on it.

77. He described his experience. He had spent 21 years at sea and the last 5 years of which was in command of bulk carriers of between 45-75,000 tonnes. He completed a Master of Science degree in Maritime Operations, and joined the MCA as a marine surveyor for international and domestic compliance. He joined the MAIB and became an investigator in 2005. He became an accredited inspector for marine accidents and has inspected all marine craft, including fishing and passenger ships. Since 2011, he has worked as a marine consultant for TMC Marine Consultants. His full CV is appended to his report of 5/7/19 (S/48/A.554). He said he had been involved in five full

investigations with the MAIB and had attended 5 to 10 preliminary examinations, which meant going on site, collecting evidence and interviewing the crew. He has handled approximately 50 administrative inquiries at the MAIB related to fishing vessels and since leaving the MAIB has given advice on five fishing vessel accidents including *Bugaled Breizh*, two of which were capsizes. He confirmed that investigations are wide ranging and varied.

78. He gave evidence about the *Bugaled Breizh:* her construction, certification, modifications, life-saving equipment, the trawl net and rig and the crew and their qualifications and experience. The BEAmer report concluded that the vessel was readily maintained and kept in a generally satisfactory condition since being brought into service. The last annual survey was on 12/11/03. Her navigation license was valid until 11/11/04. The life rafts had been serviced within the last 12 months. She was equipped with 6 immersion suits. The vessel had a range of different communication tools. He agreed there was nothing to suggest that the vessel was in any way not seaworthy. The vessel had a dual frequency FCB291 sounder, which is the echo sounder or fish finder. The echo sounder measures the depth of the water under the keel. The echo sounder transducer was on the port side probably on the flat bottom area underneath the engine room. He confirmed that the BEAmer report concluded that the crew were appropriately qualified to conduct fishing operations aboard the *Bugaled Breizh*. In summary all was in order and the *Bugaled Breizh* was compliant and seaworthy with a full crew who were similarly suitably qualified and experienced. He did not inspect the vessel himself.

79. Areas of damage to the *Bugaled Breizh*: Capt. Soomro confirmed there were three main areas of damage noted to the vessel after she had been recovered by the investigators from BEAmer;

(i) They found that there was damage to the vessel's stern, the rudder and the propeller. That had been caused when the *Bugaled Breizh* was dropped on 29/6/04 during an attempt to re-float her, they concluded.

(ii) The second area of damage was the breach of the hull in way of an echo sounder transducer. They concluded, having carried out detailed tests and analysis that the damage found was mainly related to fatigue and cracks had evolved over some time. There was no evidence to link the damage to contact with another vessel.

(iii) The third area of damage was the buckling of structure in way of the bows, which is in the region of the fish hold. This was roughly symmetrical damage to both sides as depicted in pages 8 and10 of the Images bundle (I/A.8 and I/A.10). The areas were measured and modelled using computerised software using different pressures to determine what degree of pressure that would cause symmetrical deformation. In summary, BEAmer concluded that the deformations to the hull and fish hold hatchway were caused because these compartments were watertight or weathertight when the vessel was capsized and as the vessel was pulled down they in effect imploded when they reached a pressure of approximately 4-bar. There was a uniform pressure, which acted on the whole of the hull. It was therefore confirmed that the damage was not caused by a collision or contact with an external force.

80. Static stability: This is a measure of the ability of a vessel to regain an upright equilibrium position from an angle of heel, i.e. sideways inclination. BEAmer carried out calculations to determine the stability of the *Bugaled Breizh* in various scenarios. The principal purpose was to determine in what situations the vessel would have suffered a complete loss of stability causing her to sink. BEAmer carried out a series of calculations to determine what the stability figures would be for the *Bugaled Breizh* in a number of scenarios. The results appear in the BEAmer report (D/7/A.69). The results showed that when there was substantial flooding of the crew's quarters, the vessel begins to suffer a very serious loss of stability. With 2m of water in the crew's quarters that is where the most damage or the reduction in stability occurs.

81. Capt. Soomro, added that all of that analysis assumed the vessel was static, that is, in calm waters. It was necessary to look at what was happening with the elements and the environment. He said the compartments are in the midship. The crew quarters are from port to starboard and the engine room was in the centre. The fish hold is in the centre. Therefore the weight was central. He said as water is added to the vessel, the freeboard (the distance between the waterline and the main deck level) gets lower and the vessel sits deeper in the water. BEAmer carried out calculations to replicate the force on the vessel by a sideways traction or dragging force of 3.2 tonnes, being the traction exerted on a warp in normal fishing conditions, and then with the engine room flooded. The calculations suggested a loss of stability in that situation. They then carried out calculations based on a hypothesis of the net being caught or snagged. They assumed

the engine was running at 80% of power with thrust estimated at 7 tonnes. BEAmer calculated the stability with no water on deck and no flooding and concluded that the vessel remained stable. The table represents the effect of a snagged trawl and certain scenarios (D/7/A.74). In summary, with a snagged trawl and 1 metre of water on the after deck the stability levels had not fallen materially from a position of 0.5 metres of water on deck. However, the freeboard at after deck level had decreased dramatically. It shows as a negative value (-0,008) meaning the main deck had been submerged. The effect on stability when a trawl was snagged is more significant. With a snagged trawl net, 1 metre of water on the after deck and the crew's quarters flooded, all calculations are well below the baseline levels. Freeboard is a negative value of minus 5 metres (-4,774). Capt. Soomro said that that would mean the stern of the vessel had been submerged in water up to 5 metres, about 20 feet.

82. BEAmer having considered a number of scenarios, and bearing in mind the fish hold was watertight at the time, and if the engine room flooded, given its central position, the vessel would sit lower in the water but not be at greater risk of heeling over, concluded that if you add progressive flooding of the crew's quarters to the flooding of the engine room, the stability quickly deteriorates. Further, when the flooding occurs through the companionway down to the crew quarters, you come to a stage where this process is irreversible and you cannot recover. Importantly, BEAmer concluded that if there was a snag on one warp the vessel becomes materially less stable and if you add 50cm of water onto the deck the vessel becomes significantly unstable. Then as soon as down flooding to the crew accommodation occurs, the stability becomes almost zero, the vessel has a negative freeboard and it leads to capsize. Hence "*the study concluded that a sideways force by a warp reduces the vessel's stability without compromising it. However, if the couple set up by the thrust of the engine (slight compared to sea loads, especially on the stern) and a sideways pull on a warp is considered, the stability criteria, notably the areas under the righting lever curve, decrease compared to those of the vessel intact condition. The phenomenon is amplified if water is shipped on the after deck. The study concluded that a sideways force by the free board at the after deck then rapidly decreases, making down flooding of the crew's quarters possible, leading to foundering of the vessel*" (S/48/A.565).

83. Capt. Soomro confirmed that if you have a situation where the vessel is trawling and the engine is operating at 80%, a snagging of the warp causes a material reduction in stability. If you add water on the afterdeck and the doors to the crew's quarters are open there can be down flooding to those quarters. Once you add the down flooding to those quarters you have critical loss of stability.

84. That however is not the end of the matter. Capt. Soomro explained the *free surface effect* that has to be considered. In essence, water will shift from side to side. This affects the centre of gravity on board a ship. It reduces the metacentric height (GM) and causes a vessel to suffer a loss of stability. When water moves within the vessel because of external force, the vessel gets heeled over and you can capsize by the movement of water. It has a dangerous effect on stability.

85. Dynamic stability: BEAmer carried out dynamic stability assessments of the amount of sideways traction that was required to capsize the vessel in various scenarios. Given that the crew doors were open when the vessel was found that was assumed to be the case at the time of the sinking. BEAmer concluded if the vessel was intact with the crew doors open or the crew doors were open and the engine room and steering gear compartment were flooded, in either of these scenarios a force of between 10 – 15 tonnes was sufficient to start a capsizing moment.

86. Capt. Soomro stated that the conclusions based on the stability assessments were (S/48/A.566):

(i) At the time of the accident the vessel had a good static stability and met all the regulatory stability criteria.

(ii) Down-flooding of the engine room did not lead to a reduction in the vessel's ability to right itself, it just meant that there was a decrease in buoyancy and the aft freeboard.

(iii) Down-flooding of the crew quarters led to a substantial deterioration of stability, with the areas under the righting lever curve becoming correspondingly smaller. He said you would find the same effect if there was a sideway traction force applied to the warp.

(iv) The effect of the force (couple) exerted by the engine and the propeller producing thrust ahead and the trawl net snagged on the bottom would cause a reduction of

the area under the righting lever curve. Subsequent shipping of water on the aft deck amplifies this phenomena including the free surface effect and reduces the aft freeboard.

(v) The effect of adverse sea conditions would cause heavy rolling thereby increasing the likelihood of water being deposited on the aft deck followed by down-flooding of the crew's quarters. Moreover, the impact of the waves on the port side of the vessel would produce kinetic energy which would partly counteract the work of the righting movement and contribute greatly to the vessel's loss of stability.

87. Inspection of the fishing gear: Inspection of the vessel showed that the winches of the trawl were declutched. This is the action of disengaging the wire or cable drum from the motor (D/7/A.194). At the time the vessel sank the winches had been released. The condition of the trawl rig on the seabed was assessed based on underwater images taken by the Andromède and later when the vessel was recovered. The warps were subject to metallurgical analysis at the points where they attach to the trawl doors (the large heavy rectangular components). BEAmer assembled a scale model of the trawl rig to compare with how it was found lying on the bottom. An underwater survey image before the salvage was produced (I/A.11).

88. Capt. Soomro confirmed the findings of BEAmer as to the positions of the *Bugaled Breizh*, her orientation, and the distance from the stern of the vessel and the mouth of the actual trawl net was 415m. The underwater images showed that the spread of the net was smaller than in normal operation and the upper wings were a relatively short distance apart. They found the three way connection '*pignon'* (I/A.5 circled red) was the area of the snag. A '*pignon'* is a three way connection between the lower bridle and the corner of the net itself. There are bobbins being rubber wheels allowing the net to roll over hard ground and they are attached to the foot rope lying along the lower edge of the net. A tickler chain designed to move fish burrowed in the sediment was found a little further back. The head rope was found floating above the mouth of the trawl net. The head rope was a rope lying along the edge of the trawl net which had floats on it to help keep the net open vertically. The vertical opening of the net was found about 2 metres wider than normal. The cod-end of the net (the very end of the net which is slightly bulbous) was partly nested in the mouth of the net. Capt. Soomro described it

being like a sock pulled in on itself. The webbing of the upper wings was found to be torn. The ballast chains connecting that three way connection to the lower bridles were buried in the sea on the starboard side. (I/A.5 depicted from the *pignon* towards the lower bridles). On the port side most of the shackles were emerging from the seabed. The shackles are the connections between the chain and the three way connector. The upper bridles were buried for some 30 metres from the trawl wings (that is ends of the trawl net nearest the boat). From that point, the bridles were visible up to the trawl doors. The starboard trawl door (on the right if standing with the rig behind you) had passed over the port trawl door. The port trawl door had flipped over before settling on the seabed. He said for the starboard bridle and the starboard port trawl door to have passed over the port bridle the arms of the port fork needed to have closed. (It is important to note the image I/A.5 is from above and the note '*upper port bridle'* is in fact erroneous and should read the '*upper starboard bridle'*). The opening between the two arms are marked *bras superior* and *bras inferieur.* He said it is not clear whether they closed completely but the distance between the two bridles would have decreased because of the shift of weight on the warp would have caused the fork to close. If the fork on the port side had not closed, he added, then they would have expected the door to pass through the gap. However, they found it crossed over rather than between (the port door is the lower one on I/A.5 and the warp is shown going from the left hand side of the boat as you are sitting on the boat). This has happened because, in BEAmer's view, the three way connector gap has closed such that it can go over the upper port bridle rather than through the gap between the upper port bridle and the lower port bridle. He clarified that the distance between the upper bridle and the lower bridle is quite substantive, something more than 10 metres.

89. He did not consider that the evidence from the video film taken three days after the sinking would have showed a different scene to the one on the 15/1/04 unless there had been massive tides or currents in the area. He added that he was not an expert on such matters. Capt. Soomro explained that the reason the starboard side was buried when it was a soft snag only on the port warp is because initially the port lower bridle snagged on the seabed. A short while later, because the geometry of the trawl net got disturbed, the starboard lower bridle got pulled in and was buried into the seabed. He was taken to the BEAmer report where it explained this situation saying "*As the starboard warp was still being towed by the vessel, the engine of which was still running ahead, the*

spread of the trawl net was reduced and the starboard ballast chain of the lower starboard bridle moved sideways and inwards before burrowing deeply into the sediment right up to the three-way connection of the trawl net" (D/7/A/101). He accepted that it is possible that both sides of the warp got buried after the sinking but the videos have a date stamp. He accepted the BEAmer statement that in 6 months the condition of the seabed could have evolved significantly. In terms of positive evidence that the port warp was buried during the course of the sinking he said the port warp had been released so that suggests the crew appreciated the problem was on the port side.

90. Examination of the trawl rig onshore: The starboard warp was found to be 375 metres when the trawl rig was laid out after the *Bugaled Breizh* had been re-floated. Capt. Soomro said this is the normal distance which you would have on a warp of about 300 – 400 metres. The port warp was found to be 515 metres long so 140 metres longer than the starboard warp. He said that is an excessive amount of warp for bottom trawling in the area and suggests that it had been released at some stage. The ends of the trawl warps towards the net were analysed and the company undertaking the analysis concluded that the condition of the end of the trawl warps did not seem consistent with any damage that could have been caused by an unexpected event and that the warps showed only ordinary wear and tear without any excessive stresses.

91. Further analysis was carried out by the French National Test Laboratory (LNE) who found a number of permanent distortions or kinks in the warps, the largest of which extended over 25 centimetres, and were located 125 metres from the trawl door end. They also found a number of other defects including crushed, broken or twisted wires. Qualitative analysis of the elements and particles found on the wires revealed that there were traces of sodium, calcium, magnesium chlorine, sulphur, titanium and potassium. These can be explained by prolonged immersion of a wire in seawater other than the titanium. BEAmer contacted a paint manufacturer and they were advised that titanium is used as one of the additives in paint manufacturing for marine paints. Therefore BEAmer concluded that the quantities of titanium could be explained by contact with paint of the kind used on board the vessel. It should be noted that experts in the French proceedings found that the traces of titanium had been very small. They found also that the external coating of both conventional and nuclear attack submarines did not comprise any form of titanium which furthermore only penetrates the paint

undercoating in very small quantities. This accorded with the view of BEAmer that the traces of titanium were not probative of contact with a submarine.

92. Inspection of other components by BEAmer: The engine, controls, propeller and gland were inspected. The position of the engine lever in the wheelhouse indicated that it had been running ahead (D/7/A.205 of the BEAmer report for photograph of the engine control lever). The propeller blades showed that the pitch was set for ahead movement. The water level alarm system detectors were working but would only give a visual not audio alarm to rises in water level as one of the wires to the audio siren had been disconnected. Capt. Soomro was unsure whether that had been disconnected in seawater or if someone had disconnected it. If the latter, at time of the sinking there would have been visual alarm but not an audio alarm. The starboard life raft had been correctly deployed and inflated and was found during the search and rescue operations. The port life raft was actually found at the seabed alongside the vessel with its weak link on the hydrostatic release unit intact, it had not deployed. The weathertight doors on the main deck of the vessel, the forward store doors, were open. The door to the mess room on the port side was open. The chief engineer's cabin and the entrance to the engine room were probably closed but not fully secured. The door to the crew quarters was open, and a sliding breakwater door was open as well (I/A.22). The rear most door is for the crew's quarters and the forward door is the entrance to the engine room, it should be noted from the diagram. The stern tube was intact, as was the steering gear compartment, meaning no water ingress. The bilge pumps had been correctly set up. The two radars were set at 4 miles and 12 miles. The VHF radio was set on a private channel and the other was set to channel 71 which is reserved for port operations and ship movements.

93. BEAmer and their analysis: Capt. Soomro considered the potential causes considered by BEAmer. They eliminated all but one in their final analysis. They rejected the following potential causes;

(i) Flooding of a compartment below the freeboard deck without external force acting upon it. This did not lead to capsize although there was some loss of stability.

(ii) Flooding of the crew's quarters was considered as it would bring the stability levels below the base line. However they concluded that for this to have occurred the doors

would have had to be open and the *Bugaled Breizh* would have to be shipping seas on deck.

(iii) Flooding of the engine room through various components such as stern gland, rubber stop gland and seawater cooling system. BEAmer concluded that based on the examination of these components it was unlikely as they were all in good condition.

(iv) Flooding through the small hole in the port echo sounder was considered. They concluded that it would have taken about 8 minutes for the engine compartment to flood. The visual alarm would had gone off and 8 minutes was a long time for the crew to have understood that there was something wrong with the vessel. One of the early indications would be that the engine would have stopped as the generator is coupled to the main engine. The first thing to go would be the loss of power and there would be a blackout.

(v) A floating object, such as a shipping container, causing the echo sounder damage was considered. BEAmer made inquiries and they were told that no ship had reported any loss of containers at the time.

(vi) They concluded that it was not possible for a surface vessel or a submarine to have been in collision with the vessel. A reason was that the skipper said he was capsizing. He did not report a collision. In addition the vessel would have stopped to render assistance and there was no damage to indicate such an event.

(vii) BEAmer concluded that the snagging of a submarine on the trawl net is inconsistent with the material observations of the trawl rig. No evidence linked the trawl net to being in contact with a submarine. They also ruled out snagging of the warps.

(viii) They also ruled out snagging of the net on a large obstacle on the seabed. An undamaged underwater submarine cable was too far from the incident to be a cause.

94. Finally, they considered the possibility of a soft snag, that is to say some part of the trawl gear gradually burying into the substance of the seabed. Capt. Soomro said when comparing the videos taken after the accident they found changes in the seabed in the later films. The seabed was found to be flat with relatively low ridges. In the first video they found that the three-way connector and the bridle chains of the trawl net were found buried with what appeared to be a mixture of sediment and mud on the up slope of a shallow concave depression in the seabed. They ruled out the possibility that both of the bridles of the trawl rig had burrowed simultaneously based on their observations

of how they found the trawl doors. If it had been simultaneous then the trawl doors would have just dropped there and they would have been parallel to each other. In this instance, one trawl door had crossed over to the other side so that is why they think it was one side which was buried initially. BEAmer analysed and put forward an explanation. They concluded that the port side bridle had burrowed first and snagged the seabed. As a result of that the starboard, one also followed.

95. BEAmer's analysis of the sinking: Capt. Soomro explained that they considered the area marked as '*Pignon'* and circled in red over "*Area of Snag*", also known as the three way connector, on the port side was the first point of contact with the seabed causing the initial snag (I/A.5). As a result the '*Pignon'* became stationary for a few seconds so the other part of the net (the upper bridle) would have continued forward as it was still being pulled along. That caused the fork to close. Therefore when one point of the net became stationary and the other continued forward or was being pulled forward, the distance between the upper and lower bridge would have closed. Since that distance closed and because they found that the starboard door had crossed over, they concluded that the port side actually snagged first and then the starboard side was snagged afterwards. There would not have been an abrupt stop. The vessel would have become stationary over a short period of time. BEAmer calculated that the port side of the rig would continue forwards for 5 (4.9) seconds and then come to a halt.

96. On the starboard side, if an object is being pulled by two identical forces, and one gets destabilised, the other one automatically gets destabilised as well, and this is exactly what they considered had happened. As the geometry of the trawl rig was disturbed, the other side has become out of sync as a result of the forces that had been applied and has flipped over to the port side. The starboard warp was still being pulled forwards and this caused a contracting in the spread of the net. As a consequence, the starboard ballast chain connecting the lower starboard bridle to the net started to be pulled in towards the port side. BEAmer concluded that this could cause the starboard ballast chain to embed itself into the surface of the seabed. Eventually this would cause the trawl door to flip over to the port side. Because the fork is closed the door can pass over the upper port bridle. Therefore, a soft snag of the port side of the trawl gear accounted for how the trawl doors were found crossed over on the seabed, Capt. Soomro said.

97. The explanation of events: Capt. Soomro described the explanation given. BEAmer considered the initial direction the *Bugaled Breizh* was heading, in a north-east direction, and that the prevailing wind and seas at the time would have been following her. That would mean they were coming behind her aft beam. In those conditions, BEAmer considered that a vessel would roll a lot. Upon snagging the trawl gear, the vessel would come to stop within about 5 seconds. There would then be an increased tension on the port warp and it would have a sideways component because the engine was still going ahead. The vessel would turn to port and she would also take on a sideways list. He explained the effect of the gallow blocks being at a height from the main deck, which means force being applied at that angle would cause the vessel to heel over.

98. The combined effect of the wind and sea swell would reduce the vessel's reserve stability because it would prevent it from righting itself. This is because where the vessel has turned to port, it most likely took up a position beam-on to the seas swells and the wind. The seas and swell would have their own kinetic energy and that kinetic energy and would be acting on the whole length of the port side of the hull. That kinetic energy would not allow the vessel its natural movement of coming upright. The vessel may want to come upright but the waves may prevent it.

99. He said once the vessel heels and her weight is up on the gallow blocks, the vessel will heel. In addition, the traction which BEAmer calculated would also pull the vessel by the stern. This would cause the vessel to take on a trim by the stern (this means that the boat would be pulled down at the back) and she would be heeled over. The freeboard would likely reduce as the distance between the waterline and the main deck becomes smaller. Seas would be shipped onto the boat on the aft deck. This would be progressive as the water built up. It might therefore take some time for the water to build up unless there's a very large wave. It is possible for there to have been such a large wave and that would have brought on a significant amount of water. The main deck has freeing ports on the side which are holes intended to let out water typically with hinged flaps. Whether water is cleared out of those ports depends on how much water you have on the deck and how much water is coming over the ship's side. The clearing of water through the ports is affected by the motion of the vessel as the vessel would be bobbing up and down into the waves and rolling side by side which reduces the chance of water

being cleared. The crew quarters door was open and there was a significant amount of water being built up on main deck so that water would have started to go into the crew's accommodation and then as that happens stability deteriorates very rapidly. When the vessel reaches such a position the vessel tends to come in an equilibrium and it would remain heeled over to port in an unstable position. As more water finds its way down inside you reach a point of no return.

100. The port warp brake was released. Capt. Soomro estimated this probably happened in a few minutes. The port warp was released given the difference in length of the two warps. The significance of releasing the port warp brake is that the vessel would have been pinned down by the port warp at that stage. He concluded it had been released manually as he was not aware of an automatic release. There is no evidence as to whether it was released from main deck or wheelhouse.

101. He provided schematics showing the port warp releasing (I/A.28). He said once the port warp was released, the main weight would have come onto the starboard warp, which was still under tension because the engine was still moving ahead. The weight would have moved from the port side to the starboard warp and possibly as a result of that the vessel would have taken on a starboard list or heel. Any water on the main deck would have immediately shifted to the starboard side as a result of the free surface effect. This would have caused the starboard heel (I/A.28). If the crew were on main deck they would have known something was seriously wrong.

102. With the vessel listed to starboard she would have started to take more water onto her deck. The crew accommodation was on the starboard side. The entrance has a sill of about 60cm. The sill might have been higher than this when they were port heeled but because it was listed to starboard that sill height would have been lower. If the ingress rate was around 10 litres a minute, if the vessel had listed over to starboard the rate of ingress would have almost doubled and water would go there faster. In this situation, Capt. Soomro considered that capsizing would become very rapid. At 30 degrees heel, the main deck would be flooded and the ingress of water would have continued until she capsized. He considered that this analysis was quite plausible. He said snagging is a routine event on a fishing vessel, but if you don't react correctly to the situation then things can turn nasty very quickly. He said there have been cases

which the MAIB has investigated to that effect. He could not think of any scenario that BEAmer did not consider. He said that on the basis of their report, BEAmer were justified in excluding the scenarios that they excluded on the grounds they did. He added they were justified in regarding the soft snag theory as the probable cause of the sinking.

103. Capt. Soomro was asked about these conclusions. He said on the balance of probabilities the most likely mechanism was that a soft snag of the port warp caused the vessel to heel to port initially and thereafter the events were as BEAmer described. He agreed that analysis was consistent with the presentation of fishing gear on the seabed and the condition of vessel. Therefore, the most likely scenario was that eventually the crew's quarters were down flooded which led to the loss of the stability of the vessel. He did not regard BEAmer's failure to mention the freeing ports and if they were operating or not as significant. He could not say how much water the vessel would need on the main deck before the crew's quarters started to down flood. He said before the port warp was released the initial list was to port and therefore the water was not entering the accommodation. As a result, at that time the vessel was safe albeit with diminished stability. As soon as port warp was released the weight transferred over to the starboard warp and the vessel heeled to starboard. As a consequence the water on the deck on the port side would have moved over to the starboard side and the down flooding would have begun.

104. He said he had considered the possibility of the snagging of the trawl gear by a submarine in his report (S/48/A.575). He agreed with BEAmer that a net would be too close to the bottom of the seabed and there would be substantial damage to the net if the submarine had snagged the net. He also agreed that if a transiting submarine had snagged both warps the net would have been lifted off the seabed and that would have caused a significant disturbance in the arrangement of the fishing gear on the seabed and therefore that was not a viable cause of the casualty. He said the snagging of either warp would mean the warp would be dragged inwards or outwards. If either had occurred the arrangement of the gear would have been inconsistent with that which was found and observed. In neither scenario would they be lying parallel. He also agreed that it would be obvious on the warp if there had been contact of sufficient force to impact a vessel of the size of the *Bugaled Breizh*. There would be substantial and visible

damage he said. He remains of the view that one can rule out the possibility of a submarine snagging the warps or fishing gear. He also agreed that the evidence had developed since the BEAmer report concluded that there were no submarines present, and that adds weight to their conclusions as to cause.

105. He said it remains his view, on the balance of probabilities, that a soft snag was the mechanism of the casualty.

106. He was asked about his assessment of the work done and the assessment performed by BEAmer. He said stability can vary over a period of time because owners change equipment whereas BEAmer had used figures from 1987. He did not consider that this affected the reliability of the conclusions but may have affected the possibility that the vessel might not have been as stable as they thought. The evidence of M Gueguiniat was that the bridge was never unsupervised (S/15A/A.97B). Capt. Soomro said he can only assume that the bridge was manned at the time they made the VHF call, as BEAmer did not talk to any witnesses. Capt. Soomro said there was no evidence as to how quickly the skipper reacted other than that the port warp was released. Having considered a number of issues, he considered that BEAmer carried out a competent and thorough accident investigation and arrived at the correct conclusion. The probable cause was one he would subscribe to. He would have said if he had thought as a matter of physics that there was some other cause.

107. Other experts: Captain Soomro was asked a series of questions about the theories and explanations provided by experts in the French proceedings. In addition, he had considered detailed questions put to him in advance of the inquests by the families and had responded in two supplementary reports. The short summary of his responses is that he did not change his assessment of the incident and cause. He had said in his first report that unless there was some concrete evidence that a submarine caused the *Bugaled Breizh* to capsize, the sequence of events provided by BEAmer appeared to be the most likely cause of the vessel capsizing.

108. He was questioned about the finding that the starboard trawl door had crossed the port trawl door. He agreed that there was a divergence of opinion as to which trawl door crossed which, with the court appointment experts thinking it was the port warp

that crossed the starboard warp. Capt. Soomro stated that in his supplementary report he was not able to establish who was correct. He added in his oral evidence that he does not know who is right. He said he was not sure when looking at all the other evidence that the point is significant. He remained of the view the port side snagged because that was released because it was under tension. He did not consider the port side snagging would cause the port side to cross the starboard side as that remained under tension. He said the release of the port warp by a declutching force would not cause the port warp to recoil and cross the starboard warp. He finally agreed that for the soft snag theory to be correct, one would need to be confident that the starboard warp did indeed cross the port warp. He added he did not consider the starboard warp over port warp scenario was consistent with the exogenous force theory because they were found 5m apart and for a submarine to snag the trawl gear, he would expect it to be some distance away, not 5m in respect of both the warps and trawl doors. In reality, they were found almost parallel. The same applies if the port warp were to have crossed over the starboard warp. For an exogenous force to have acted on the vessel he would have expected to see the geometry of the trawl rig net being disturbed. He added if there was an exogenous force, he would have expected the trawl door to move in the direction of the exogenous force. He said that any movement of the trawl door is entirely dependent on the circumstances and nature of the exogenous force. He added that you have to consider the evidence of any material damage to the wire and how long that force was applied. The longer the force was applied the further away it would have been from the perfect geometry.

109. He was asked questions about the diagram in the Mr Theret's report of 27/6/07 and how, if the snag was to the port side, the vessel came to be south east of the natural sailing line that was north east (Supp 1/13/A.252). He said the trawl gear is similar although curved round. He said the *Bugaled Breizh* was trawling in a north east direction and would have been pulled to port when the snag initially happened. Once the port warp was released and the weight went onto the starboard side, that is, when the vessel was pulled round to starboard. The diagram does not show evidence of the warp having pulled to port as the diagram depicts the position after it has sunk. He said there was still some residual buoyancy in the vessel plus the tide running in an easterly direction so the vessel had settled on sea bottom more to starboard. He said if a submarine had taken the cable and run with it the 140 metres of cable would have been

lying apart and there would have been resultant damage to the wires. He said the coils in the cable suggest that the brake was released and the recoil had made it accumulate in coils. The port warp when released was under tension and would unspool. He said you would only get the loops if someone had released the clutch and the trawl had run freely. He said the starboard warp crossing the port warp is consistent with diagram. He said the damaged cable was consistent with wear and tear. He said there was no damage to the cables consistent with the considerable forces associated with a submarine causing the ship to sink. He also rejected the '*bowstring theory',* as that did not take account of water resistance and to work the points had to remain fixed, whereas with a sinking vessel one end was moving. He repeated that the damage caused by a submarine would be significant and that was not what was found.

110. He was asked specifically about his opinion that the port warp was released manually causing the additional 140m of warp cable to run out. Mr Hyams put to Capt. Soomro M Georges and M Theret's analysis on this matter, suggesting the speed of reeling was limited to 1.2 to 1.5m per second. Capt. Soomro explained the possibilities as being first, in normal circumstances the wire would lower in a certain predetermined speed following the pushing of the levers. Second, an automatic release would be used if there were pre-set tensions of maybe up to 10m. The third method would be an emergency manual release where the drum would be declutched from the motor. That would mean freely lowering away depending upon the tension on the wire. If the tension continued the wire eventually would come out at as he put it at '*the bitter end'.* He considered this third example fits the scenario given the way the port warp was found released by 140m and coiled in various areas. That indicates there was tension on the wire and it was released in one go, he said. He said the wire will only run out to that extent where there is tension on it and not all of the cable would run out. Capt. Soomro noted that M Georges and M Theret prefer the second option (automatic release). He said if that was the case it would be a more gradual process and releasing the port warp by a few metres would automatically trigger off the weight coming onto the starboard warp. He said that the difference in length between starboard and port warps is explained most likely by the manual release of the port warp. He said that the winch would have to be declutched and the port winch brake turned off.

111. In other questioning he accepted that BEAmer were a government body but said they were like the MAIB in the UK. He said the French government, through BEAmer, were tasked by international and national law to investigate all sorts of marine accidents and investigations, in order to see if lessons could be learnt in order to improve the safety of life at sea.

112. After extensive questioning, Capt. Soomro confirmed that the soft snag theory is the more likely explanation. He said BEAmer provided a very balanced hypothesis on the cause of the accident and it was similar to what he would have done.

113. Cpt Soomro had searched the MAIB website for incidents of trawlers sinking due to snags and identified 14 incidents. One involved a submarine the *Antares.* Not all were lost because of a soft snag. Some vessels were lost because of a soft snag, but there were other causes including where a net had caught an obstruction on the seabed, onto a pipeline and various other objects. He said snagging is a hazardous occurrence and it is a known occurrence for fishermen. Regardless of what the type of snag is, the issue is that once the vessel has snagged her nets, the correct response by the crew to recover from this precarious situation is of paramount importance. In this case he said we only know that they let go of the port warp. With regard to drawing parallels with snags between vessels with different trawls, the broad principle is the same he said. If you snag an object on the seabed it exerts a force on your warps. What happens after that, the weather conditions and stability are all contributory factors to an accident. He said snags in themselves would not be reported and so there is no way of knowing how common or not they are. He said he had researched the MAIB records and there are no reports of sinkings due to snags in the area concerned. He was asked about the sinking incident following a snag concerning the *Pescado* in 1991 south of Lizard Point, approximately 10 nm from the incident concerning the *Bugaled Breizh*. Although fishing in a different manner, he accepted, when asked to consider the MAIB report as to the mechanism of loss, that in that incident there was a port snag resulting in the release of gear on the port side and capsizing to the other side, and as such, it was '*almost the same mechanism'*.

114. Finally, Capt. Soomro was asked about the time the events would have taken. He said he had looked at the time intervals in the calls to Mr Cossec on the *Eridan* who

said they were about 1 to 1.5 minutes apart. He suggested a time of 3.5 to 5 minutes may have been the time for the incident to occur. He explained '*Once the snag had occurred a skipper would take some time if he was in the wheelhouse to reconcile in his mind what is happening. He would look over the side or he would look at the warps, he would take stock of where he was, so it would take at least a minute to figure out what is happening. Sometimes people react very quickly, sometimes people take their time and arrive at a conclusion and then take a step. We don't know what happened on that day but if we allow that, it is about a minute he has taken, that time. He would have then taken steps to possibly call his crew on deck and it is also possible that having failed to come out from the snag he's now released his warps. So that's the time I figured might be about two to three minutes. And then the fact that there was about only one and a half minutes to two minutes between the first VHF conversation between the two vessels, that is the which I estimated would be the time where the vessel initiated her capsizing moment and that's why the time is very short and that's why the VHF went out at that time'*.

Conclusions and findings of fact:

115. I have taken into account all that has been submitted by counsel in writing and orally.

116. In deciding the issues in these inquests I have put aside sympathy and emotion. It would be easy to be sympathetic to those who have lost loved ones. However, such feelings are poor guides to making decisions of fact. I have decided the issues coolly and dispassionately. What I must not do is speculate, that is, guess. I am entitled however, to draw inferences that is a conclusion based on a solid fact I find proved. Hence, drawing an inference is different from speculation where there is no solid basis of fact.

117. The events of the 15/1/04 were, I find, as follows:

(i) On 15/01/04, the *Bugaled Breizh* and the *Eridan* were fishing about 15nm south of Lizard Point, Cornwall. At some point in the morning (around 09:30 according to Marc Cariou, the second mechanic of the *Eridan*), some crew

members of the *Eridan* reported seeing a grey helicopter, with a black ball underneath it, fly by. This description accords with the appearance of the Sea King early warning helicopter with the radar deployed underneath the fuselage.

(ii) At about 10:30, the *Bugaled Breizh* and the *Eridan*, were within sight of each other (three to four miles apart) and each crew had hauled their trawl net. At approximately 11:00, the vessels had VHF contact and the crew of the *Bugaled Breizh* informed the *Eridan* that they were going to do their next trawl in the south east. Shortly thereafter both vessels restarted fishing. The crew of the *Eridan* anticipated that this trawl would last about 3 hours. The weather conditions at that time were force 4-5 winds and a swell of 2-3 metres.

(iii) At 12:23, the *Bugaled Breizh*'s EPIRB was activated. At about 12:25, the skipper of the *Bugaled Breizh* Yves Gloaguen, called the *Eridan* on a private VHF channel to say that he was capsizing and to ask for assistance. M. Gloaguen gave his position as 49 42N 005 10W. The skipper of the *Eridan*, Serge Cossec, immediately instructed his crew to haul their fishing gear so that they could go to the aid of the Vessel. Within about 1 to 2 minutes, M. Cossec returned to the wheelhouse, where he received a further VHF call from the Vessel which quickly became inaudible and then stopped. At 12:35 or shortly thereafter, the *Eridan* broadcast a Mayday message and contacted the French Coastguard (CROSS Gris-Nez).

(iv) At 12:38, the MRCC Falmouth, operated by HM Coastguard, received a distress alert coming from the beacon released by the *Bugaled Breizh*. The triangulated position at that time was 49 39.4 4N 005 11.21W. This had an accuracy of 84% and was in fact a distance to the south of the Vessel. The MRCC broadcast a Mayday message from 12:50 onwards.

(v) An English fishing vessel, the *Silver Dawn*, was about 6-7nm from the casualty (in position 49 34.9 N 005 17.1W). Her crew heard the Mayday message and set off almost immediately to the coordinates provided by the MRCC.

(vi) At 12:46, the MRCC operators contacted the RNAS Culdrose to ask for a search and rescue helicopter from 771 Squadron to be despatched to the scene. A Sea King Mk 5 helicopter with call-sign R193 (grey with red markings) was duly tasked, launched quickly and was on route over Mullion by 12:59.

(vii) At approximately 12:50, the Dolfijn, a Walrus class submarine of the Royal Netherlands Navy, made VHF contact with MRCC Falmouth. She reported her position to be 49 31 06N 005 16 11W (about 12nm south of the scene) and estimated her arrival time on the scene as 14:00. Also at approximately 12:50, the Dolfijn contacted the *Silver Dawn* by VHF. She asked the *Silver Dawn* to confirm her intentions and warned that she should keep at a distance (specifying a closest point of approach).The Dolfijn indicated that she was also travelling to assist with the distress call.

(viii) In the meantime, a Sea King Mark 7 early warning helicopter (all grey in colour), with call-sign XV697, which had been on exercises nearby, went to the scene and made some initial observations. The crew sighted a lifebuoy (ring) floating on the surface with some signs of wreckage around it, and a large life raft on the surface.

(ix) At 12:57, HMS Tyne (a fishery protection vessel) contacted the Coastguard stating that she was about 20nm from the scene and that she would proceed there, with an estimated arrival time of shortly after 14:00. At 12:59, the Lizard Lifeboat Launching Authority was paged by MRCC. At 13:08, the *Silver Dawn* reported to MRCC that she was on her way.

(x) At about 13:15, rescue helicopter R193 arrived at the scene and the early warning helicopter XV697 left. At about the same time, the *Eridan* also arrived at the scene. It was possible to identify the area of the sinking of the *Bugaled Breizh* from diesel and debris on the surface of the water. In the early course of the search, the crew of the *Eridan* saw a life raft, which was fully inflated but with no one inside.

(xi) At 13:16, the crew of R193 spotted a life raft and sent down a diver, LACMN Hall, who confirmed it was empty, collected identification documents and, as was appropriate procedure, punctured it with his dive knife so that it would not cause wasted efforts in the search for survivors by remaining on the surface. By this time, the wind was strong, blowing at around 35 knots, and conditions were sea state 7 with rain showers. Shortly afterwards, the crew of R193 saw the body of a man in the water. LACMN Hall was sent down and found the man apparently dead. He recovered the man to the helicopter, where he and his colleague, SACMN Robertson, began efforts at resuscitation. The discovery was reported to the Coastguard at 13:43. The man was found wearing knee length black stockings, and can be identified as M. le Floch.

(xii) At an unknown time later during the search, the crew of the *Eridan* came across what they believed to be a second life raft. In their evidence, the crew's recollections differ as to the colour of this life raft. The various members of the crew gave their reasons for thinking it was a different life raft from the first. What they saw was in fact the partially deflated life raft visited by LACMN Hall that was later recovered. The second life raft did not detach from the *Bugaled Breizh*.

(xiii) The *Eridan* also went on to find the Vessel's EPIRB about 0.3-0.4nm from the last known position of the Vessel. In addition, the crew of the *Eridan* recovered two life rings from the water.

(xiv) At approximately 13:50, the *Silver Dawn* arrived at the scene and joined the search efforts. The crew of that vessel later retrieved a length of mooring rope from the water.

(xv) At 13:57, the crew of R193 reported that they had located the body of a second man, and LACMN Hall was again winched down and brought the man up to the helicopter. As before, efforts to resuscitate the man were attempted, but without success. This man can be identified as M. Gloaguen. Once both men were onboard, R193 transported them directly to RCH Treliske, where a paramedic team were waiting, before re-launching to refuel at RNAS Culdrose. After

refuelling, R193 returned to the scene of the sinking, arriving back just before 15:00.

(xvi) A second rescue helicopter was called out at 13:58 and had arrived on scene at approximately 14:27. This was a Sea King Mark 3 helicopter (yellow in colour) from RAF Chivenor and had call-sign R169. They searched the area but they did not make any significant findings.

(xvii) Over the period of the searches, further vessels continued to come to the scene and assisted in looking for survivors. These included several further fishing vessels and commercial vessels (including a large car transporter). The Dolfijn arrived on scene by 14:00. At around 14:07, HMS Tyne arrived and assumed on-scene co-ordination responsibility, communicating with the MRCC and giving directions to the search and rescue resources.

(xviii) The Lizard Lifeboat arrived at about 14:20. At about 14:41, the crew recovered five white fish baskets and a life jacket from the search area. At 15:08, a French fishing boat, the Hermine, reported that she had picked up an empty life raft from the Vessel. This lifeboat was later examined and was found to have a 10cm cut to its base. LACMN Hall confirmed that this tear was consistent with the sort of stabbing motion he had made.

(xix) In the course of the searches, various witnesses taking part in the search and rescue efforts recalled seeing a surfaced submarine in the vicinity of the sinking. Witnesses identified it as a Dutch Walrus Class submarine, which accords with the appearance of the Dolfijn. Mr Hosking of the *Silver Dawn* communicated with the vessel. It was the Dolfijn. No witness saw the submarine surface; all said she was on the surface when seen.

(xx) At 15:45, R169 was released from the scene to refuel at RNAS Culdrose, and then to return to its base. Thereafter, the searches continued until shortly after 17:00, when bad light made continued searching impossible. R193 left shortly before 16:50 to return to its base. Search and rescue efforts were formally discontinued for the day at about 17:15, although HMS Tyne stayed in the area

until 17:40 and some French fishing vessels (including the *Eridan*) also continued searching for longer. Some further searches were carried out on the following day, Friday 16/01/04, but no significant further discoveries were made.

(xxi) At 14:54 on 15/01/04, a signal was issued to SUBFLOT (all UK submarines), the Dolfijn and the FGS U22. It informed the addressees that a fishing vessel accident had occurred, resulting in loss of life, in position 49 39.44N 005 11.21W on 15/01/04, and asked them to record their positions at 12:53. Later, a further signal was sent to the three submarines known by the Royal Navy to be at sea in the Southern Fleet and the South Coast Exercise areas, the Dolfijn, FGS U22 and HMS Torbay which asked them to report their positions. The three submarines reported their positions which were 11nm, over 40nm and over 100nm respectively from the scene at 12.53.

Findings of the causes of the sinking of the *Bugaled Breizh*

118. Before I turn to my findings a few preliminary points:

(i) Delay.

It is nearly 18 years since the *Bugaled Breizh* sank with the loss of five lives. The UK inquests were delayed correctly, given the French proceedings which took a number of years to be finalised. Inquests were commenced in November 2019 and were stopped because enquiries had to be made concerning non-allied submarines. In 2020 progress was halted due to the pandemic that has affected all nations. That is why, in summary, it is now in the late autumn of 2021 that we reach this point.

(ii) BEAmer and expert witnesses.

I have considered the material adduced in evidence. I have no doubt all persons who have given opinions as to the loss of the *Bugaled Breizh* did so in good faith and did their best to help the relevant judicial process they were involved in. The benefit of having divergent opinions is that the work of others can be tested and challenged.

I decided earlier this year that the BEAmer report from 2007 should be given considerable weight and that it would be for me to determine if that report is '*incomplete, flawed or deficient'* following the decision in R *(Secretary of State for Transport) v HM Coroner for Norfolk and others [2016] EWHC 2279.*

Capt. Soomro said that BEAmer had considered every feasible or conceivable scenario, and that there was no other hypothesis or scenario which could explain the circumstances of the sinking other than those considered by BEAmer. BEAmer had been justified, he said, in excluding the scenarios that they had excluded on the grounds they gave in their report. On the basis of their investigations, he added, BEAmer had been justified in concluding that a soft snag was the probable cause of the sinking. Capt. Soomro identified a few limitations in the work undertaken, however, he did not consider them to be material. Having identified those limitations, he ultimately took the view that these issues did not cast doubt on the reliability of BEAmer's conclusions as to the probable cause of the casualty. Captain Soomro concluded that, having regard to the length of the investigation, the range of sources used and the methods of analysis, BEAmer had carried out a proper and competent marine safety investigation.

Having considered the evidence of Capt. Soomro and his own assessment of the BEAmer report and criticisms made, I am satisfied the work, assessments undertaken and the conclusions reached were detailed, appropriate, thorough, professional, objective and balanced. The report represents the work of a body seeking to find answers to the incident without apportioning blame or responsibility. I have no doubt if the work done had taken the investigators to another conclusion they would have said so. I therefore find no reason to reject the report. It is not '*incomplete, flawed or deficient'*.

Capt. Soomro. I find that his evidence was also balanced, objective and fair. In fact he was not subject to any major criticism or challenge. I have no doubt in his case too that if he had found the work of BEAmer to be defective or deficient in any way he would have said so and further if he had reached a different

conclusion as to the cause if the sinking he would have said so. The fact that his independent assessment and conclusions as to the cause of the sinking accord with those of BEAmer some 12 years before supports my conclusion as to the value of the BEAmer report.

Finally, having considered the evidence of the expert reports adduced in the French court proceedings, his evidence was that none of the contrary views expressed affected his view as to the reliability of the BEAmer report, or his own opinion, that a soft snag of the trawl gear was the probable cause of the sinking. I therefore accept his evidence.

(iii) Other witnesses

I bear in mind that all witnesses have done their best to assist this investigation. A long time has passed and memories can alter with time. I have taken that into account. Witnesses there that day searching for people they knew or had worked with were faced with a terrible apparently unexplained tragedy. The *Bugaled Breizh* had disappeared in a few minutes leaving very little behind. I can understand how thoughts can develop afterwards. I have no doubt the fact that a submarine was seen at the scene doing, in fact, nothing other than assisting in the search, caused speculation to run as to a submarine being involved in the sinking.

Others that day displayed great professionalism, skill and bravery. Helicopter crews were flying at low levels in difficult conditions, lifeboat crews did their jobs to the high level we have come to expect but one man in particular deserves particular comment. LACMN Hall risked his life three times to descend from a helicopter. Each time he detached himself from the wire and jumped into the water and swam first to a life raft and then to recover the two casualties. Each time returning to the helicopter. Of all those involved that day he deserves special mention and praise.

The witnesses from the Royal Navy. I find the evidence of Rear Admiral Asquith, Cdr Simmonds and Cdr Coles to not only be credible but accurate. I

accept their evidence. Importantly, what they said was supported by first, a detailed knowledge of the subject matter i.e. submarine movements and the processes and systems involved. Second, the materials themselves being signals from the day, berthing plans, QHM movement logs and individual logs for the submarines support and corroborate their evidence. Finally, as to the events on the 15/1/04 concerning HMS Turbulent, there can be no doubt as to the detailed accounts given of her location alongside in Devonport on 15/1/04 and her troublesome and incident packed short voyage on 16/1/04. The events that day for, perhaps, the wrong reasons were clearly etched in the minds of those who were there and importantly, in command.

Finally, although the Royal Netherlands Navy did not provide live evidence from a witness present on the day onboard the Dolfijn, cooperation was afforded that assisted in understanding the movement of the submarine that day. The log book was provided and Captain Van Zanten provided valuable evidence.

I add that France has also assisted in the provision of materials for their submarine.

119. I now turn to my findings in relation to the causes of the sinking:

(i) Was there a submarine in the area at the time?

(a) UK and allied submarines:

I am satisfied and find that the only submarines at sea in the South West exercise area on the 15/1/04 were the Dolfijn, HMS Torbay and U22. None of them was close to the *Bugaled Breizh* at the time she sank. They were, as they reported, many miles away and each of them was operating as instructed by Subnotes and/or as permitted by the WPP. I accept the evidence of Cdr Simmonds on this topic in relation to all allied submarines, irrespective of class or purpose:

(i) The Dolfijn was transiting the area in accordance with the Subnote issued to her on the surface and was not dived. She

changed course and responded to the emergency by notifying Falmouth MRCC of her intentions and assisted in the search. She was about 11 or 12nm south of the *Bugaled Breizh* at the time of the incident. I accept the evidence given by Capt. Van Zanten, Captain Van Driel and the two officers on board that day. In addition, her location is supported by Subnotes, signals sent on the 15/1/04 and thereafter confirming her involvement in the SAR, the WPP and her log.

(ii) HMS Torbay was further to the west exercising dived, as she was permitted. She was 107nm from the incident. Her position is supported by the contemporaneous signals sent, the Subnote which authorised her to leave Devonport on 14/1/04 to travel surfaced to submarine operations area 1 and authorised her to dive in the A1, A2 and B1 areas of the South Coast exercise areas on 15/1/04 (west of the sinking of the Vessel). A QHM movement signal, which confirms that HMS Torbay was scheduled to leave Devonport on the morning of 14/1/04. The Devonport Berthing Plan, which records that HMS Torbay was in Devonport until 14/1/04. The WPP which recorded that, on 15/1/04 between 04:00 and 23:59, HMS Torbay was only authorised to be in exercise areas A1, A2 and B1 (as noted above, materially to the west of the sinking of the Vessel). The log book for HMS Torbay, which records that she was at Devonport on 14/1/04 and at sea on 15/1/04 and notes her position as at 12:53 on 15/1/04, as per the signal sent to CTF311 on the day of the sinking.

(iii) U22 was to the east of the *Bugaled Breizh* at the time, also surfaced transiting to the Mediterranean. She was over 40 nm from the sinking. Her position is supported by the contemporaneous signals sent and the WPP, which shows that the U22 was only authorised to be in exercise areas H5,

I2 and I3 (materially to the east of the sinking) between 08:00 and 23:59 on 15/1/04.

I am also satisfied that the other named submarines were where the records show them to be, namely, in dock in Devonport. That is specifically so for HMS Turbulent. I accept the evidence of Cdr Coles and Rear Admiral Asquith that HMS Turbulent was not at sea on the 15/1/04. Their evidence is supported by: the Subnote which authorised HMS Turbulent to leave Devonport on the morning of 16/1/04 and therefore not before then; the QHM movement signal, which likewise showed Turbulent sailing out of Devonport on the morning of 16/1/04; the WPP, which was to the same effect; the Draft Operations Brief; the Devonport Berthing Plan, which showed HMS Turbulent in dock continuously up to the morning of 16/1/04; the logbook for HMS Turbulent, which confirms that she remained alongside at Devonport for the entirety of 15/1/04; and the letter from the Royal Navy Fleet Command to the French Navy, 24/05/05. For the 16/1/04 the log and the entries made are consistent with the accounts given as to the events that day and her return on the 17/1/04 for repairs, the WPP, which shows that she had been scheduled to transit (surfaced) to ASWEX on 16/1/04 and the Investigation Report, which explains the circumstances of the damage sustained on 16/1/04. Finally, a signal timed at 16:45 on 16/1/04 from HMS Turbulent to FLEET OPS. In the signal, HMS Turbulent gave details of the incident on 16/01/04, involving the drogues.

The others in dock included U26, HMS Triumph and HMS Trafalgar. In each case, the supporting documents were available including for U26 a Subnote and QHM movement records, contemporaneous signals recording locations, the Devonport berthing plan and for the UK submarines logs.

In short, the position has not changed over the years. The three submarines at sea were identified and notified to be so on 17/1/04.

For the avoidance of doubt I am satisfied and find that no other unidentified allied submarine of any type or class was in the area at the time. That includes submarines from the USA or under civilian operation as described by Admiral Salles. I add there is no evidence to support his contention and so far as the idea still persists today, I reject it as wholly fanciful and unfounded.

I am satisfied for the reasons given that the WPP and Subnote system in particular was robust and effective in controlling and monitoring allied submarine movements at the time. For there to have been a breach of the protocols and safety systems in place would have been a matter of major if not international concern. Given my findings, there was no breach of the systems in place on 15/1/04.

(b) Non allied submarines

The inquests in November 2019 were stopped because this issue was raised. The matter has now been resolved. I am satisfied that no non-allied submarine was in the vicinity of, or anywhere, near the *Bugaled Breizh* when she sank for the reasons given by Rear Admiral Asquith.

(ii) What caused the *Bugaled Breizh* to sink?

I am satisfied that the other potential causes: collision with a surface vessel, a hard snag on an object on the seabed, water ingress via the vessels systems and/or defects and contact with a submarine either with the net, both warps or one both outward or inward in direction can be ruled out for the reasons given. In particular, the evidence does not support submarine involvement first, due to the lack of the significant damage to be expected either to the trawl rig or the warps in such a situation given the forces involved and necessary to drag the *Bugaled Breizh* down and second, the geometry of the rig as it was found is inconsistent with the rig being dragged for some distance in one

direction. The evidence of damage to warps can be discounted and was consistent with wear and tear.

I am satisfied and find that the cause of the sinking was as described by BEAmer and Capt. Soomro, namely, a soft snag so called of the trawl rig on the seabed. That, in combination with other factors, caused the *Bugaled Breizh* to heel to port, take on water, move to starboard causing the crew quarters to flood and she sank rapidly. The crew appreciated the snag was to the port side hence the warp was released on that side. In all the vessel sank in a few minutes.

In detail:

(i) At around 1220 on 15/1/04 The *Bugaled Breizh* had been trawling in a north-east direction, about 15 nm south of Lizard Point followed by the prevailing wind and seas. This would have meant that the wind and seas were coming from behind the Vessel, which would usually cause the Vessel to roll considerably.

(ii) The weather conditions at that time were force 4-5 winds and a swell of 2-3 metres. There were gusts of wind up to 40-50 knots at times.

(iii) While fishing, the trawl rig snagged to the port side on the seabed. Once the port warp had been snagged, (at the area identified described as the Pignon), the Vessel would have come to a stop within about 5 seconds. That process would have caused increased tension on the port warp. As the engine was still running, this would have caused the Vessel to turn sideways and heel over to port. The rear of the Vessel would then have been pulled downwards (trimmed to the stern). At that point, the combined effect of the wind and sea swell would have reduced the Vessel's reserve stability and that prevented the Vessel from righting herself to an upright position.

(iv) The Vessel would then have had seas shipped onto her aft deck. In light of the weather on the day of the sinking, significant water could have been shipped onto the aft deck by waves at this stage. Thereafter, the position and movement of the Vessel would have reduced the chance of water being cleared by the freeing ports.

(v) There would, at this stage, have been a significant amount of water building up on the main deck. This would have caused the stability of the Vessel to deteriorate further.

(vi) Those on board the Vessel reacted to the snag by releasing the port warp brake (explaining the length of the port warp as it was found and the findings and observations in the wheelhouse and of the winches). This is supported by the difference in the length of the two warps.

(vii) Once the port warp brake had been released, the weight of the Vessel and the tension on the port warp would have transferred to the starboard warp. This caused the Vessel to turn sideways to starboard and to heel to starboard. The free surface effect then meant that the water on the port side of the deck, would have immediately shifted over to the starboard side of the deck. At this stage, any crew members on the main deck would have known that something was seriously wrong with the vessel.

(viii) Finally, and crucially, the heel of the Vessel to starboard would have then caused rapid down flooding to the crew quarters due to the location of the crew accommodation on the starboard side of the Vessel and because the doors were open. At this stage, the further deterioration in stability and sinking of the Vessel would have occurred very quickly. A capsize was by then inevitable. The *Bugaled Breizh* sank.

Engagement of Article 2 in these Inquests

120. The Article 2 procedural obligation is only engaged where (a) death has taken place in circumstances which have been held automatically to engage the obligation (e.g. suicides of prisoners) or (b) it is arguable that substantive duties under Article 2 have been breached by the state or its agents in relation to a death. The deaths in this case did not take place in circumstances automatically engaging the obligation, and so the procedural obligation could only be engaged if there were an arguable case that the state or its agents breached substantive Article 2 duties (i.e. the duty not to take life without lawful justification, the general duty to establish systems to safeguard life or the operational duty sometimes owed by state agents to protect life).

121. Given my findings of fact and specifically that there was no submarine let alone one operated by the UK in any way involved in the sinking of the *Bugaled Breizh,* it cannot be said that Article 2 duties have been breached in that the deaths of M. Gloaguen and M. le Floch do not arguably involve a breach of any duty by the state or its agents in relation to their deaths. That was and has been my provisional view throughout these proceedings and now it can be confirmed. Article 2 is therefore not engaged.

122. Accordingly, M Gloaguen and M Le Floch died as a result of an Accident. That will be the short form conclusion in each case. In addition a short narrative is appropriate.

Yves Marie Gloaguen

Short-form conclusion as to the death: **Accident**.

Yves Marie Gloaguen was the skipper of the *Bugaled Breizh*, a stern trawler fishing vessel. On 15/01/04, the *Bugaled Breizh* and the *Eridan*, another French trawl fishing vessel, were fishing about 15 nautical miles south of Lizard Point, Cornwall. At about 10:30 (English time), the *Bugaled Breizh* and the *Eridan* were within sight of each other (three to four nautical miles apart) and each crew hauled their trawl net. At about 11:00, both vessels restarted trawl fishing. The weather conditions at that time were force 4-5 winds, with a swell of 2-3 metres.

At 12:23, the *Bugaled Breizh*'s Emergency Position Indicating Radio Beacon was activated. At about 12:25, M. Gloaguen called the *Eridan* on a private VHF channel to say that he was capsizing and to ask for assistance. He gave his position as 49 42 N 005 10 W. Within about 1 to 2 minutes, the *Eridan* received a further VHF call from the *Bugaled Breizh* which quickly became inaudible and then stopped.

The *Bugaled Breizh* sank shortly after 12:25 as a result of a fishing accident. The probable cause was that the Vessel's fishing trawl gear became buried and snagged in the seabed, which, in the relevant area, comprised of a layer of sediment and mud. It is likely that this soft snag led to the progressive loss of stability of the Vessel, which ultimately caused the *Bugaled Breizh* to sink. There was no other vessel involved in the sinking, whether submarine or surface vessel. Whilst one life raft from the *Bugaled Breizh* launched, M. Gloaguen was not able to put on or use any lifesaving equipment. M Gloaguen drowned as a result of the vessel sinking.

Pascal Le Floch

Short-form conclusion as to the death: **Accident**.

Pascal le Floch was a member of the crew of the *Bugaled Breizh*, a stern trawler fishing vessel. On 15/01/04, the *Bugaled Breizh* and the *Eridan*, another French trawl fishing vessel, were fishing about 15 nautical miles south of Lizard Point, Cornwall. At about 10:30 (English time), the *Bugaled Breizh* and the *Eridan* were within sight of each other (three to four nautical miles apart) and each crew hauled their trawl net. At about 11:00, both vessels restarted trawl fishing. The weather conditions at that time were force 4-5 winds, with a swell of 2-3 metres.

At 12:23, the *Bugaled Breizh*'s Emergency Position Indicating Radio Beacon was activated. At about 12:25, the skipper of the *Bugaled Breizh* called the *Eridan* on a private VHF channel to say that he was capsizing and to ask for assistance. He gave his position as 49 42 N 005 10 W. Within about 1 to 2 minutes, the *Eridan* received a further VHF call from the *Bugaled Breizh* which quickly became inaudible and then stopped.

The *Bugaled Breizh* sank shortly after 12:25 as a result of a fishing accident. The probable cause was that the Vessel's fishing trawl gear became buried and snagged in the seabed, which, in the relevant area, comprised of a layer of sediment and mud. It is likely that this soft snag led to the progressive loss of stability of the Vessel, which ultimately caused the *Bugaled Breizh* to sink. There was no other vessel involved in the sinking, whether submarine or surface vessel. Whilst one life raft from the *Bugaled Breizh* launched, M. le Floch was not able to put on or use any lifesaving equipment. M. le Floch drowned as a result of the Vessel sinking.

Record of Inquest Forms

As required by Rule 34 of the Inquiry Rules 2006, I must set out my determination and findings using a Record of Inquest form. I confirm that that I have completed the Record of Inquest forms for both Mr le Floch and Mr Gloaguen. These forms contain:

a) The personal details of those who have died, which include the registration details required by the Birth and Deaths Registration Act 1953;
b) The medical cause of death for each individual, which in each is "1a. Drowning", in accordance with the evidence of the pathologists;
c) A Determinations Sheet containing the short form and narrative conclusion for the individual, in the terms as I have read out earlier and which appears in paragraph 122 of this document.

Formally, and finally, I should like to thank all counsel Mr Hough QC and Miss Wakeman as counsel to the Inquests, Mr Pleeth for the MOD, Miss Sharma for HMCG and finally Mr Hyams for the families of the deceased. In his case he deserves particular thanks having acted pro bono throughout to ensure the families participated and were heard. Finally, I would like to thank the STI in particular Katherine Leslie and Laura Penny and others from Fieldfisher who have worked so hard to prepare the inquests, arranging court rooms and ensuring all progressed as it should. And finally, I repeat what I said at the outset, that I would like to thank the families of those who sadly died for participating in these inquests, their involvement has been greatly valued.

HHJ Nigel Lickley QC

5/11/21

INQUESTS INTO THE DEATHS OF YVES MARIE GLOAGUEN AND PASCAL LE FLOCH ARISING FROM THE LOSS OF THE VESSEL BUGALED BREIZH ON 15 JANUARY 2004

Jurisdiction: Cornwall & Isles of Scilly

Coroner for the Inquests: HHJ Nigel Lickley QC

Core Maps and Images for the Oral Hearings

This bundle is a selection of maps and images, some of which are from the Inquests' hearing bundles, and has been prepared to assist witnesses and interested parties at the oral hearings. Laminated colour copies of these maps will be made available in the Court for the Coroner, witnesses and interested persons and their legal representatives. Interested Persons and witnesses who are giving evidence via video link will also be sent a copy in advance of their evidence. This bundle of maps is not an exhaustive list of all maps or images that are held in the hearing bundles or that may be referred to during the hearings.

A glossary of translated words are provided on page 4 - 5 of the bundle.

Index of images and maps

Bundle map or image number	Document description	If an exhibit/appendix, identify the relevant witness statement or report	Hearing bundle reference
1.	Cdr Pollitt's Map	Witness Statement of Lt Cdr David Pollitt dated 19 December 2016	Supplementary Bundle A.87
2.	Map showing Lizard Point and the location of the sinking	BEAmer Report	Documents Bundle A.164
3.	Photograph of the Bugaled Breizh	Report of Captain Soomro dated 5 July 2019	Statements Bundle A.554
4.	Diagram of the Bugaled Breizh	BEAmer Report	Documents Bundle A.120
5.	Diagram showing the Bugaled Breizh's trawl gear	Figure 6, Report of Captain Soomro dated 5 July 2019	Statements Bundle A.577
6.	Diagram showing general arrangement of bottom trawl gear	Figure 4, Report of Captain Soomro dated 5 July 2019	Statements Bundle A.569
7.	Map showing the search and rescue areas	BEAmer Report	Documents Bundle A.172
8.	Figure showing the symmetrical deformations caused by the implosion of the fish hold	Figure 3, Report of Captain Soomro dated 5 July 2019	Statements Bundle A.563
9.	Figure showing the layout of the French rig	Figure 5, Report of Captain Soomro dated 5 July 2019	Statements Bundle A.576
10.	Images of the exterior of the Bugaled Breizh	Appendix F.2 to the BEAmer report	Documents Bundle A.189

11.	Position of trawl gear (aerial view)	Figure 6, George / Theret Report	Supplementary Bundle A.108
12.	Map showing positions of the Bugaled Breizh and the Eridan	Figure 1, George / Theret Report	Supplementary Bundle A.96
13.	Diagram showing the trawling gear in use	Figure 2, George / Theret Report	Supplementary Bundle A.97
14.	Map of submarine locations	N/A	Supplementary Bundle A.90
15.	Map detailing position of Bodies, Wind Direction and Liferaft	N/A	Supplementary Bundle A.91
16.	Photograph of Bugaled Breizh prior to sinking	N/A	Publicly Available Online
17.	Photograph of Bugaled Breizh prior to sinking	N/A	Publicly Available Online
18.	Photograph of Bugaled Breizh prior to sinking	N/A	Publicly Available Online
19.	Photograph of Bugaled Breizh post recovery of wreck	N/A	Publicly Available Online
20.	Photograph of Bugaled Breizh post recovery of wreck	N/A	Publicly Available Online
21.	Photograph of Bugaled Breizh post recovery of wreck	N/A	Publicly Available Online

22.	Diagram of Bugaled Breizh (aerial view) with annotations	N/A	Provided by Captain Soomro
23.	Diagram of Bugaled Breizh with annotations	N/A	Provided by Captain Soomro
24.	Met Office Images of Sea States based on the Beaufort Scale for winds of Force 4 – 5	N/A	Publicly Available Online
25.	Met Office Images of Sea States based on the Beaufort Scale for winds of Force 6	N/A	Publicly Available Online
26.	Diagram showing vessel trawling with equal weight on both warps	N/A	Provided by Captain Soomro
27.	Diagram showing heel to Port	N/A	Provided by Captain Soomro
28.	Diagram showing heel to Starboard by 15 degrees	N/A	Provided by Captain Soomro
29.	Diagram showing heel to Starboard by 30 degrees	N/A	Provided by Captain Soomro
30.	Map showing South Coast exercise areas	N/A	Provided by British Navy

Glossary of translated words

Map	French word or phrase	English word
5	Bras inférieur	Lower arm
	Bras supérieur	Upper arm
	Connecteur	Connector
	Ecartement ou ouverture horizontale entre les panneaux ou les pignons	Spacing or horizontal opening between panels or gables
	Emerillon	Swivel hook
	Fond	Depth
	Fûne ou cable	Warp or cable
	Gréement à fourches	Fork rigging
	Les autres appartiennent au langage courant	The others come from everyday language
	Les mots soulignés correspondent aux termes techniques.	The underlined words correspond to technical terms.
	Ouverture vertical	Vertical opening
	Pattes de planche	Plank brackets
	Pignon	Gable
7	Les Britanniques et Europe Ouest	The British Isles and Western Europe

	Régions de sauvetage et de recherché en mer	Sea search and rescue regions
13	Chalut	Trawl
	Chalutier	Trawler
	Fourches	Forks
	Fûnes	Warps
	Panneau de chalut	Trawl otter board

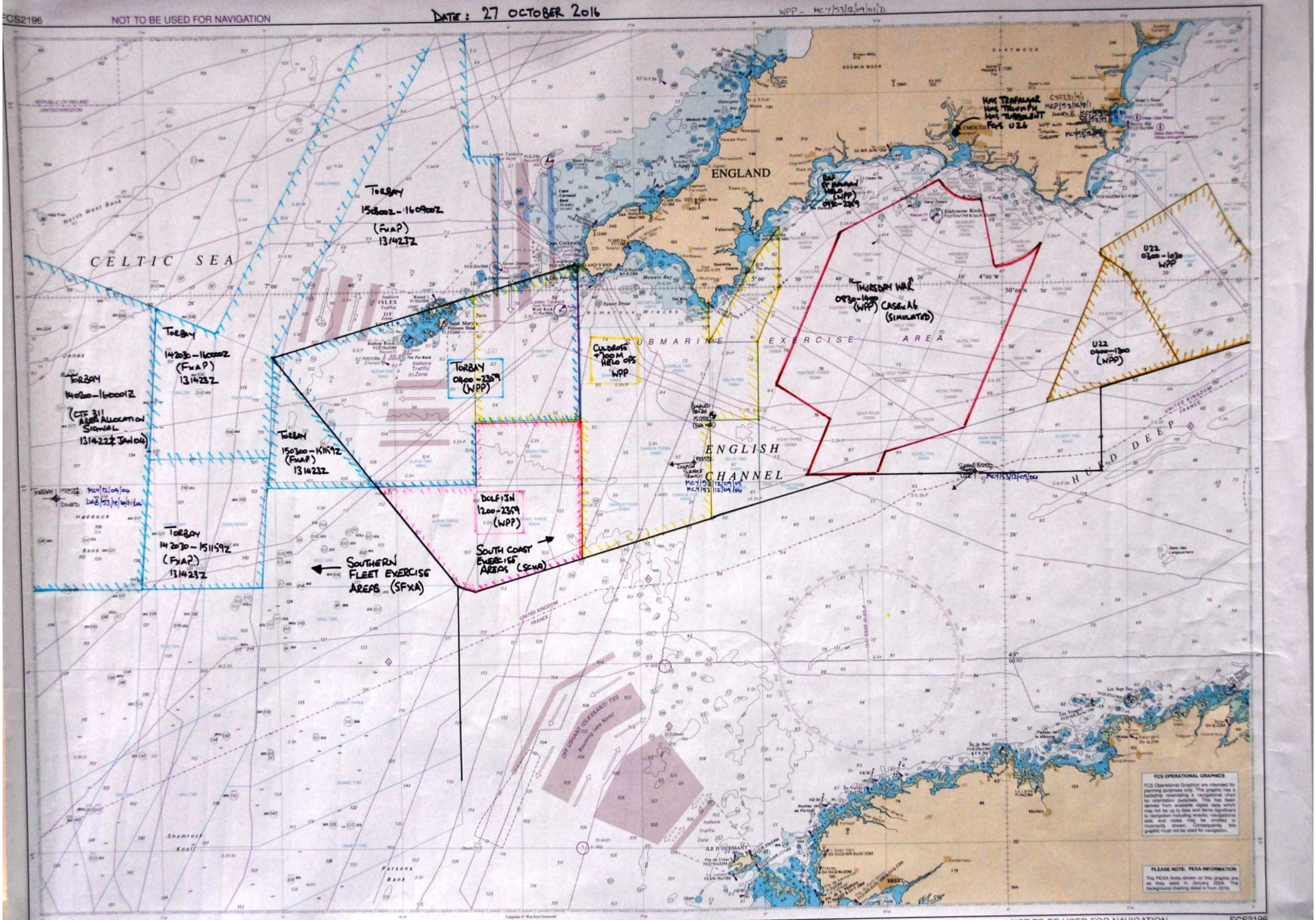
COMPILED FROM EVIDENCE SIEZED BY RNSTB

DATE: 27 OCTOBER 2016

FxAP CTF 311 Log 1314222 and 1314232 Jan 04

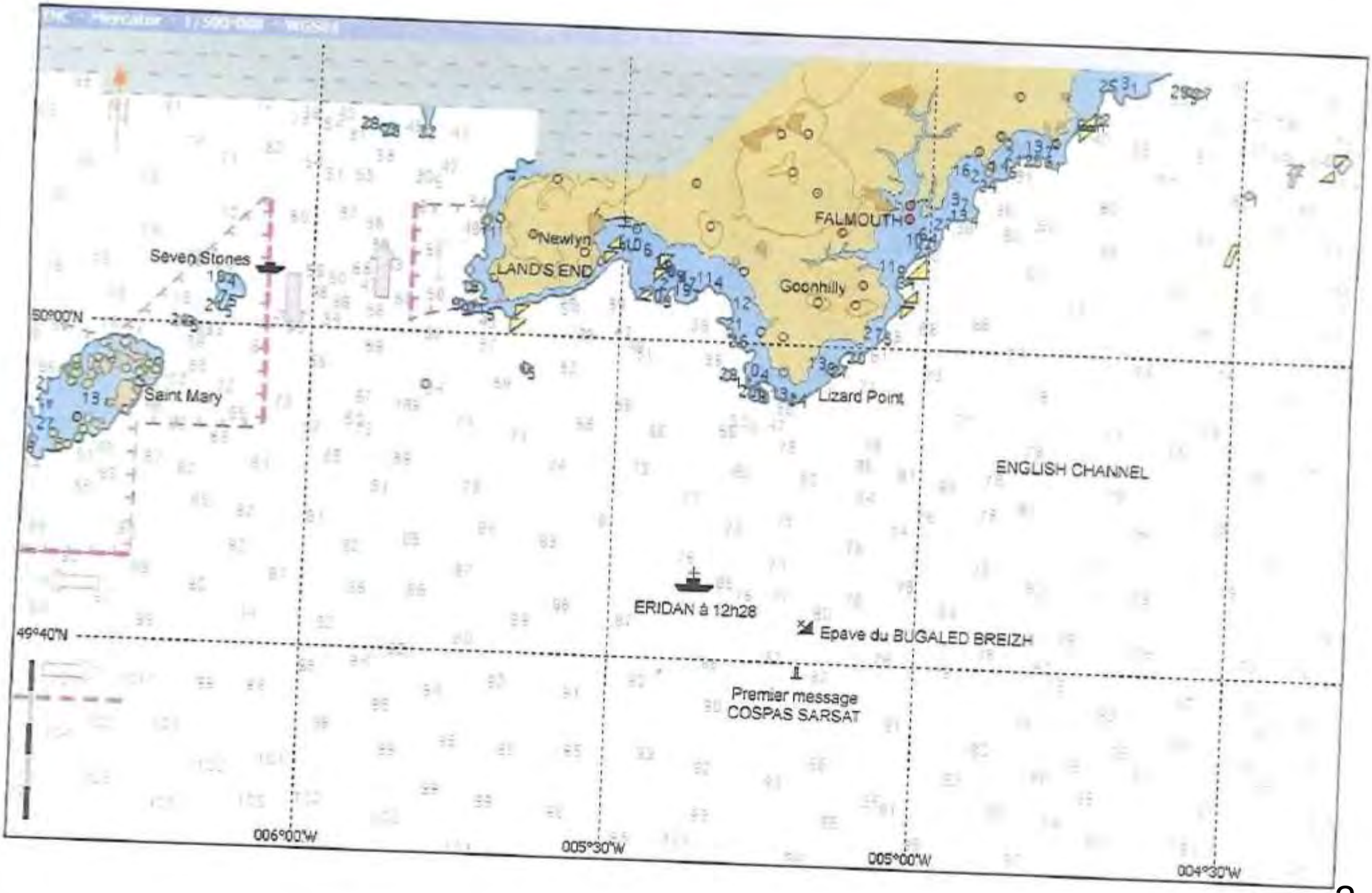
WPP - MC-1/53/12/09/01/D

FCS2196 NOT TO BE USED FOR NAVIGATION



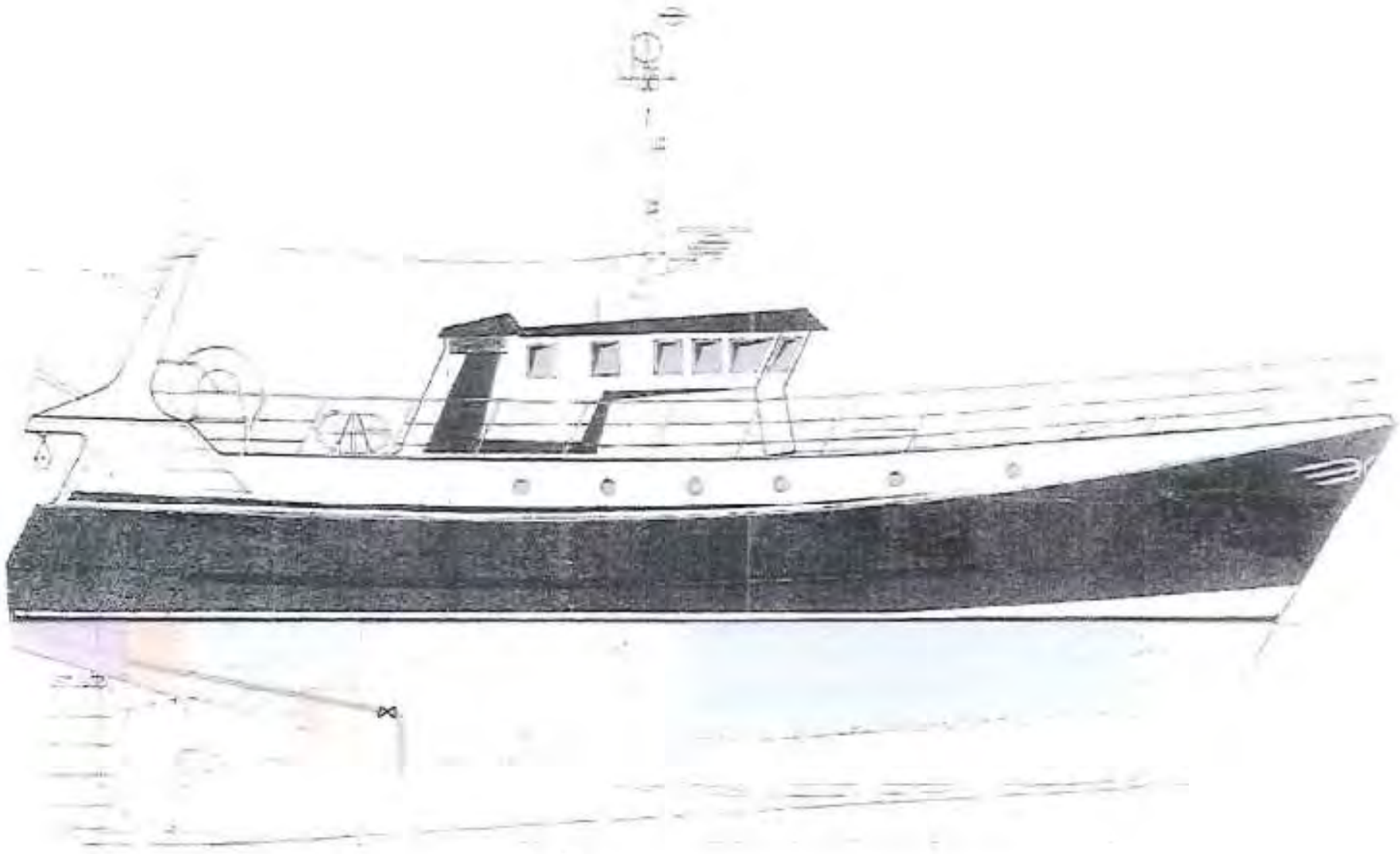
NOT TO BE USED FOR NAVIGATION FCS2196

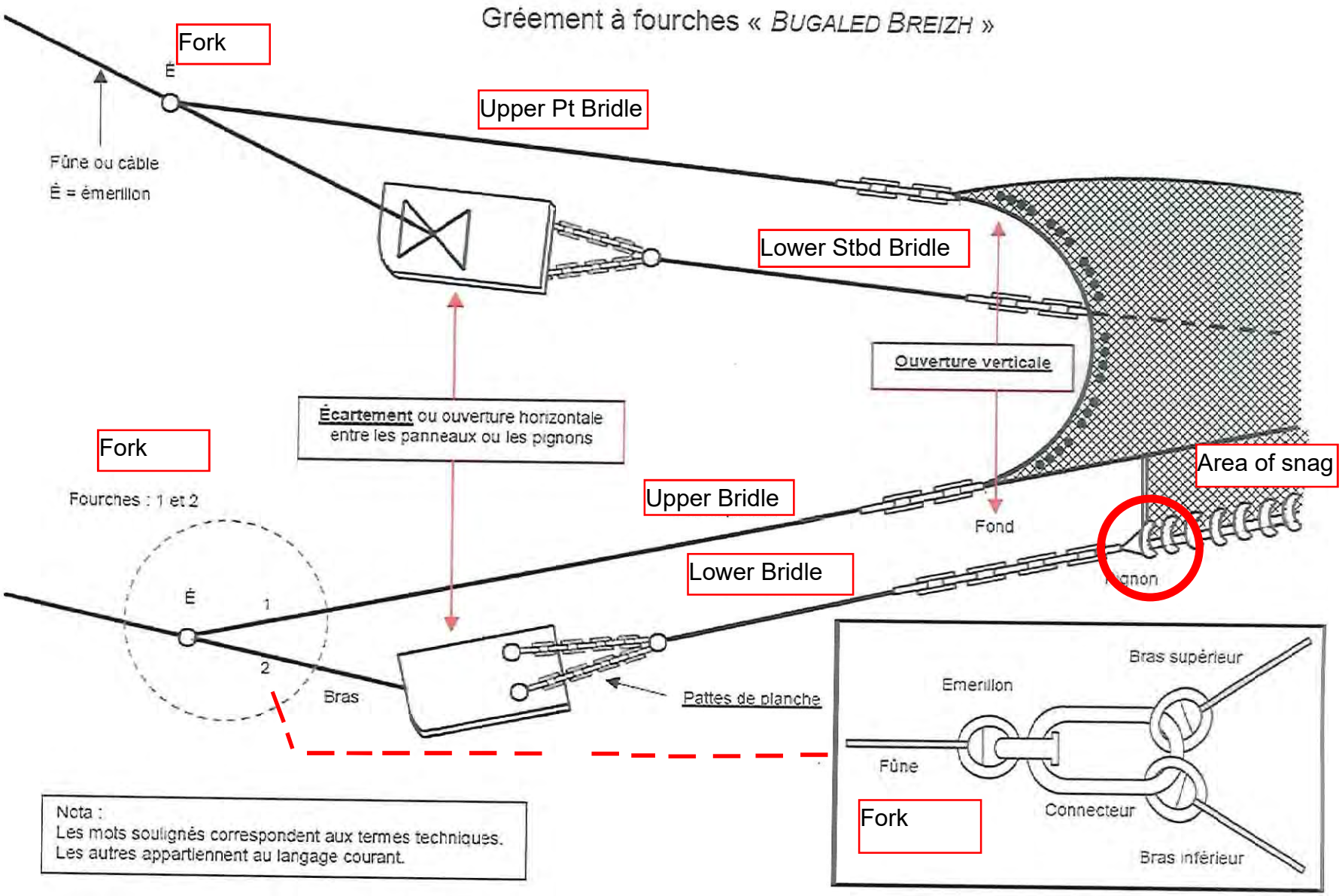
1.


Seven Stones
Saint Mary
Newlyn
LAND'S END
FALMOUTH
Goonhilly
Lizard Point
ENGLISH CHANNEL
ERIDAN à 12h28
Epave du BUGALED BREIZH
Premier message
COSPAS SARSAT
50°00'N
49°40'N
006°00'W
005°30'W
005°00'W
004°30'W

2.

3.




Gréement à fourches « BUGALED BREIZH »
Fork
É
Upper Pt Bridle
Fûne ou câble
É = émerillon
Lower Stbd Bridle
Ouverture verticale
Écartement ou ouverture horizontale entre les panneaux ou les pignons
Fork
Fourches : 1 et 2
Upper Bridle
Area of snag
Fond
Lower Bridle
É
1
2
Bras
Pattes de planche
Bras supérieur
Emerillon
Fûne
Connecteur
Fork
Bras inférieur
Nota :
Les mots soulignés correspondent aux termes techniques.
Les autres appartiennent au langage courant.

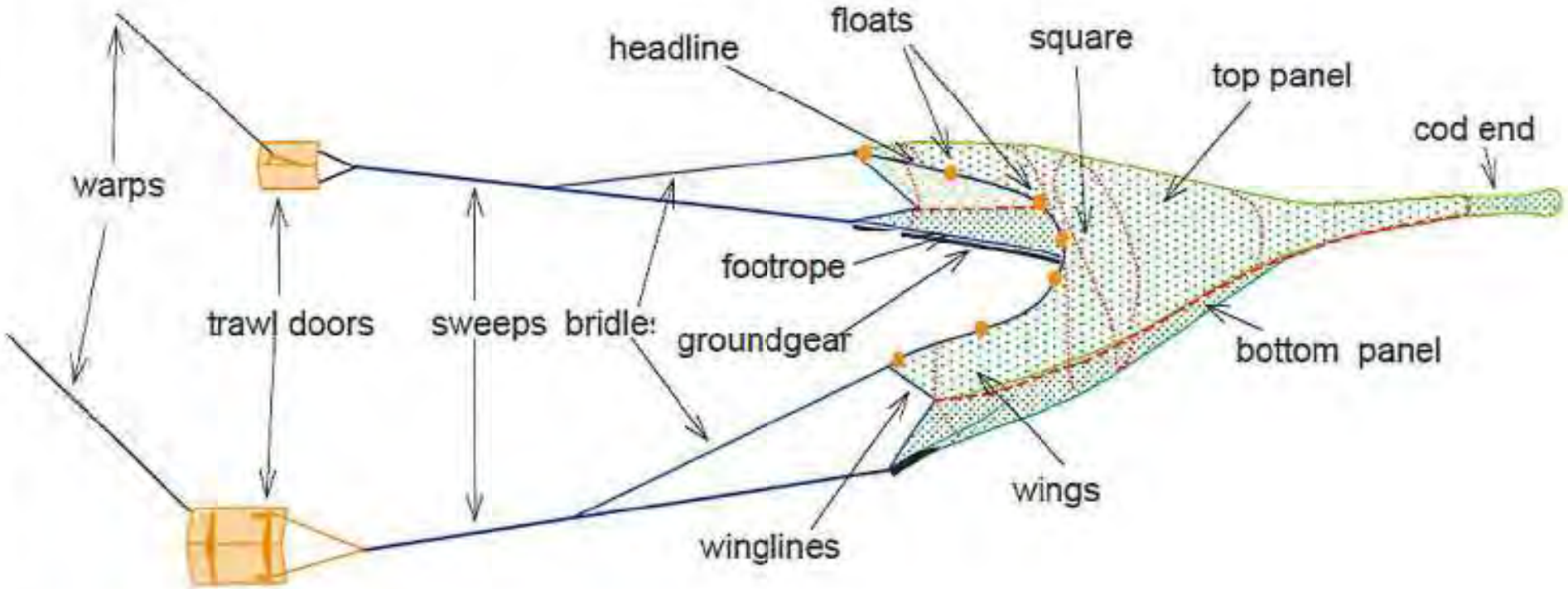
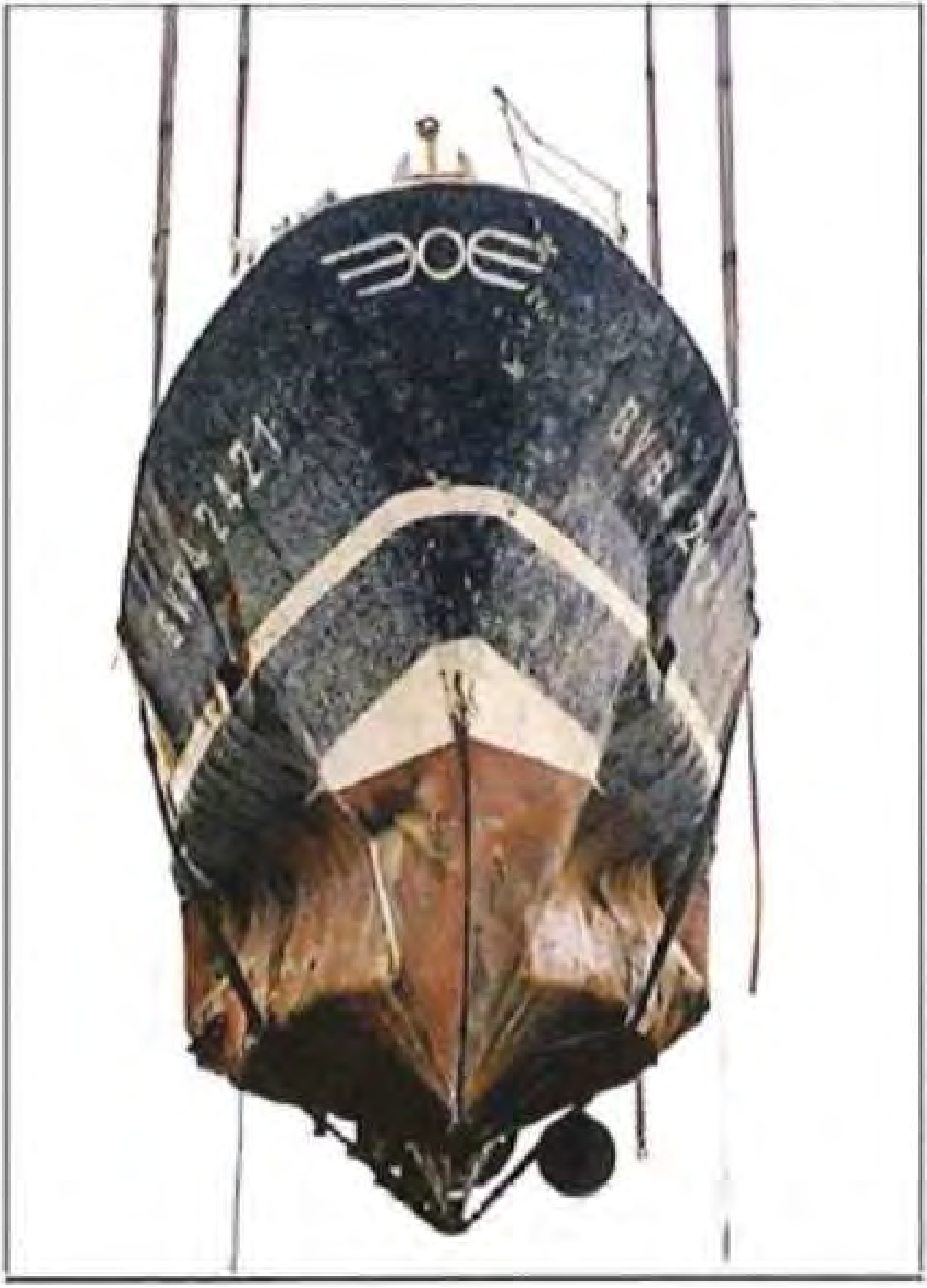


Figure 4 – General arrangement of bottom trawl gear


TORSHAVN
Shetland
Pentland
Stornoway
ABERDEEN
Oban
Forth
Malin Head
CLYDE
Tyne Tees
Belfast
Humber
Liverpool
DUBLIN
Holyhead
YARMOUTH
Valentia
SWANSEA
Thames
Milford Haven
DOVER
Portland
Solent
Brixham
FALMOUTH
STAVANGER
GÖTEBORG
ÅRHUS
BREMEN
IJMUIDEN
Zeebrugge
OOSTENDE
Nieuwpoort
CROSS GRIS-NEZ
CROSS JOBOURG
CROSS CORSEN
CROSS ÉTEL
Sous CROSS Soulac
Santander
Sous-CROSS Agde
CROSS LA GARDE
FINISTERRE
Coruña
GIJON
BILBAO
ÎLES BRITANNIQUES
ET
EUROPE OUEST
Régions de sauvetage et de recherche en mer (S.R.R.)
MRCC et RCC principaux
MRSC et RSC principaux



8.

Figure 3 – Showing implosion of the fish hold

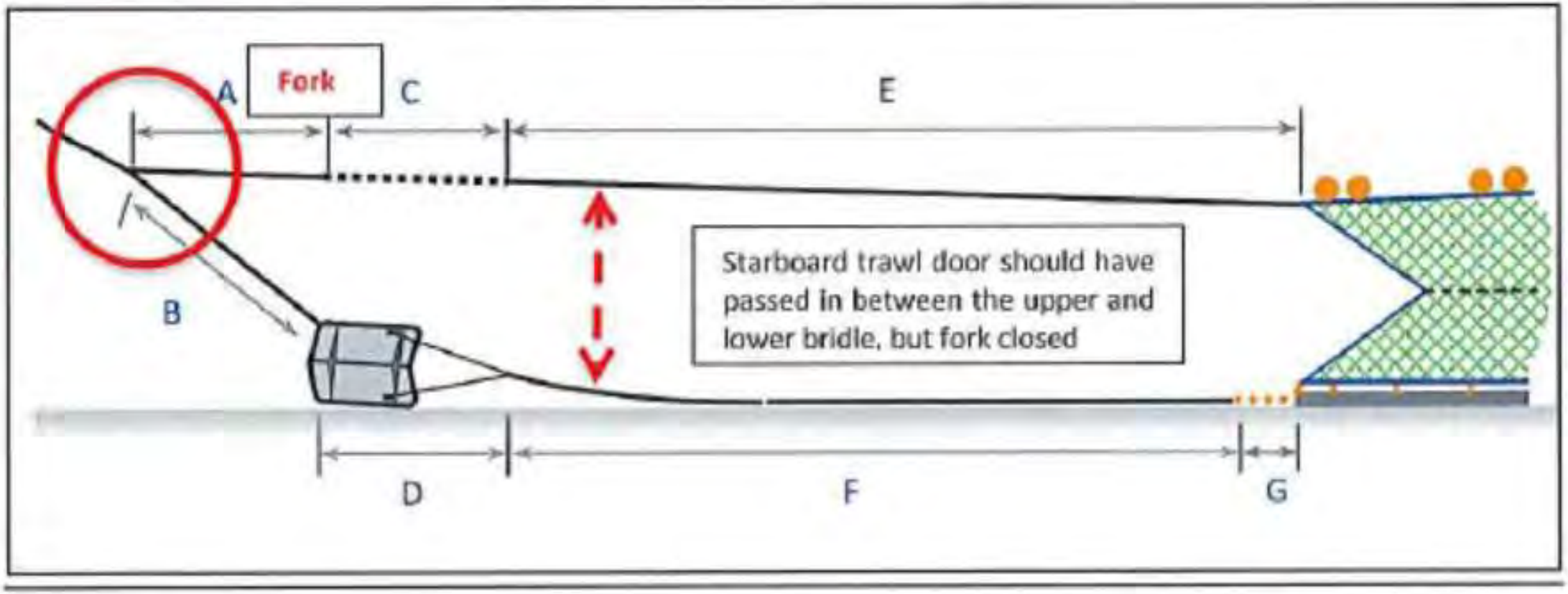


Figure 5 – layout of French Fork Rig

View of the deformation of the starboard side. The photograph shows the deformation in way of the fish hold and the double bottom below it. The bowing of the keel can also been seen.

Photograph looking aft showing the symmetry of the deformations.

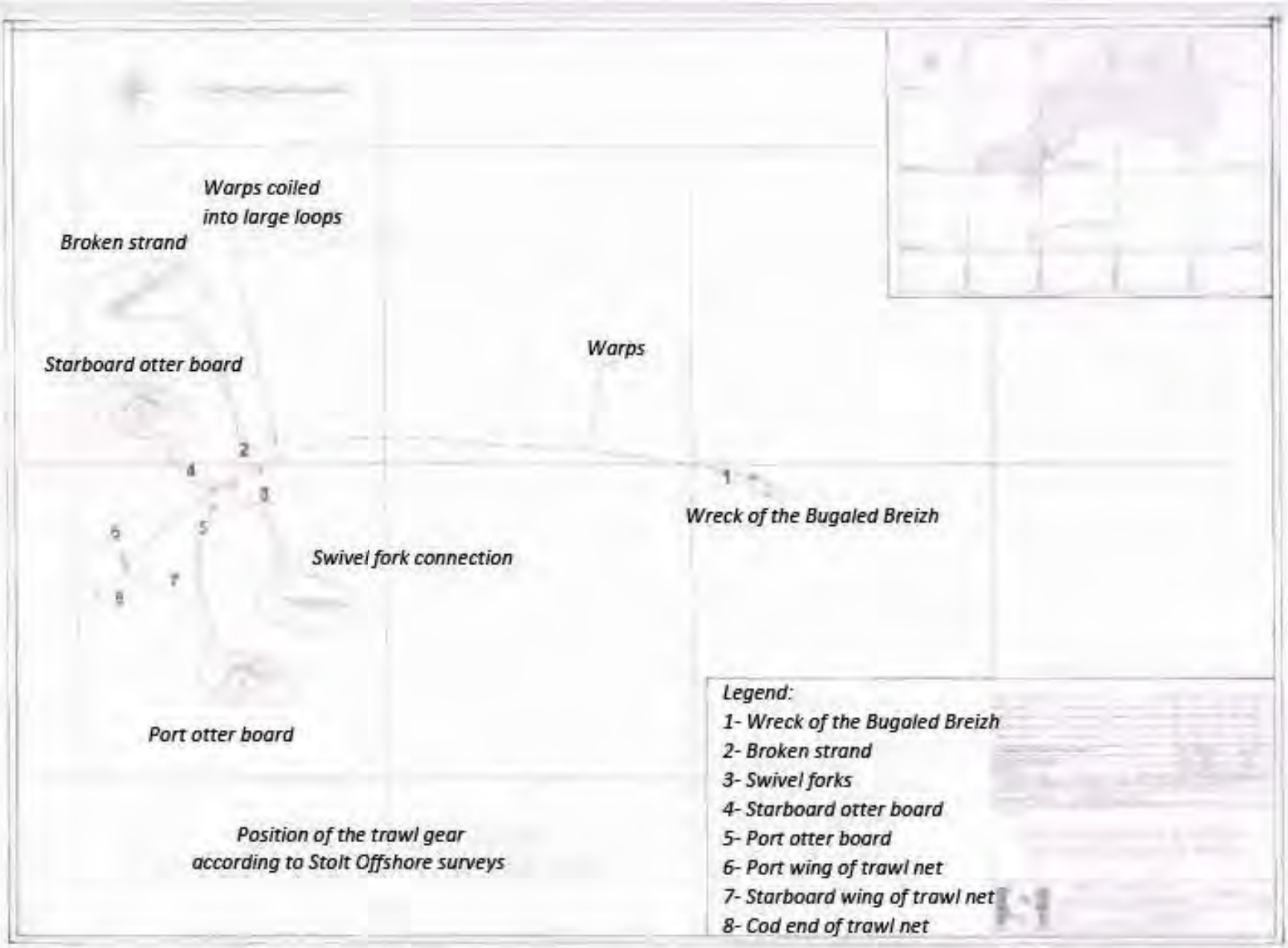
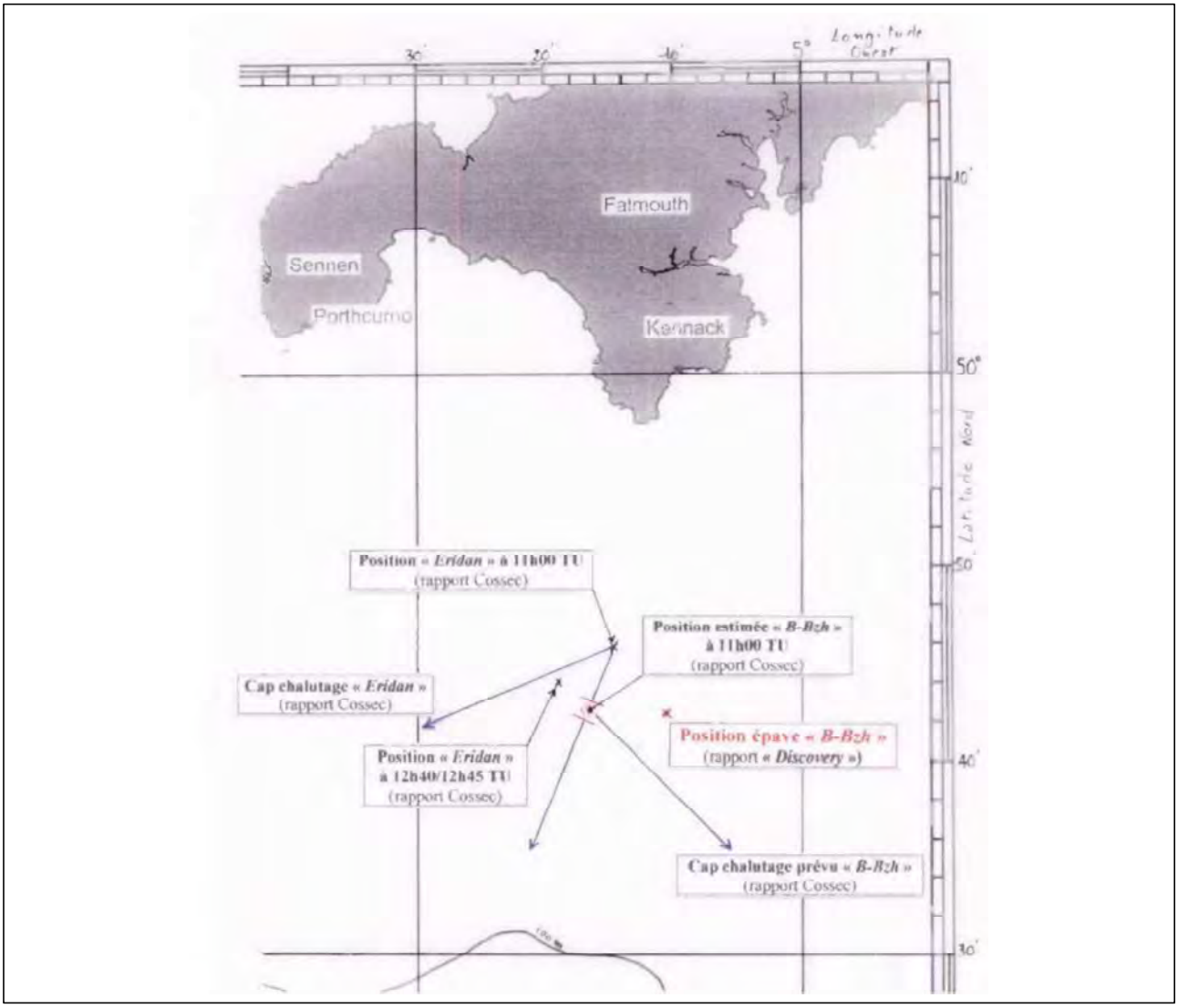
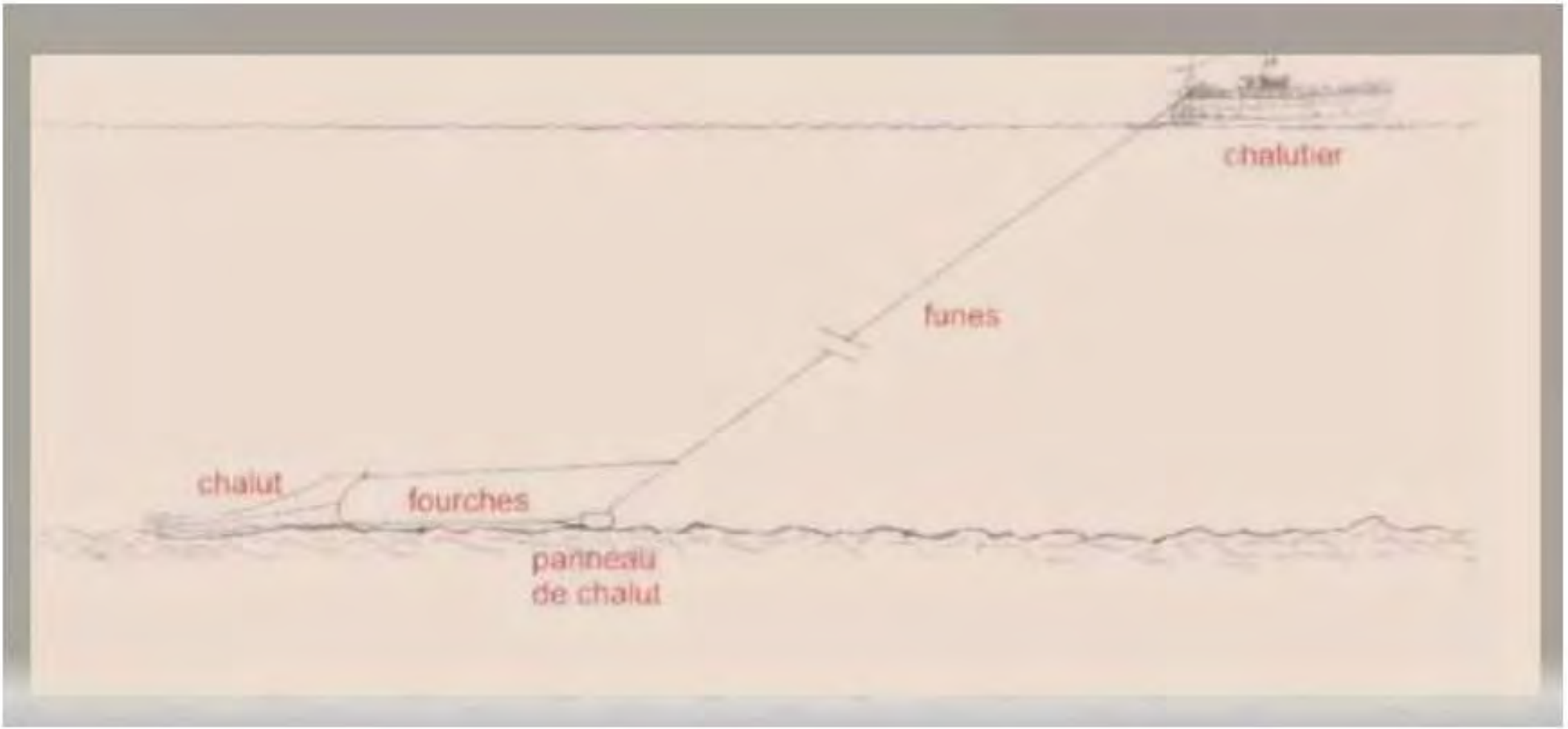


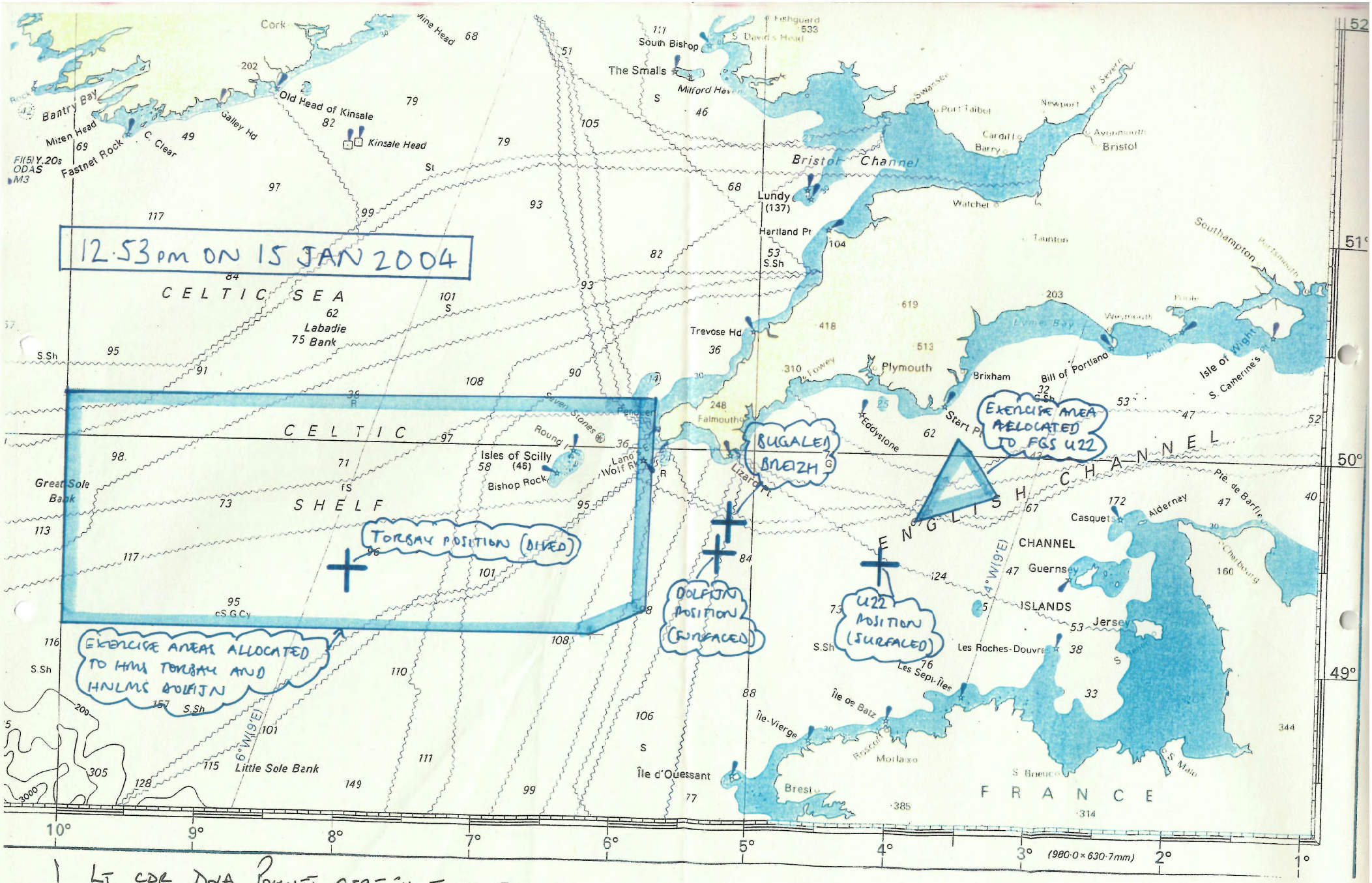
Figure 6: Depiction based on the Stolt Offshore unmanned underwater vehicle survey of the trawl gear from the ship to the cod end of the trawl net.



FRENCH	ENGLISH
Position « Eridan » a 11h00 TU (rapport Cossec)	**"Eridan" Position at 11:00 UTC** (Cossec report)
Position estimée « B-Bzh » a 11h00 TU (rapport Cossec)	**"B-Bzh" estimated position at 11:00** UTC (Cossec report)
Position épave « B-Bzh » (rapport « **Discovery** »)	**"B-Bzh" wreck position** (" **Discovery**" report)
Cap chalutage prévu « B-Bzh » (rapport Cossec	**"B-Bzh" planned trawling heading** (Cossec report)
Position « Eridan » a 12h40/12h45 TU (rapport Cossec)	**"Eridan's" position at 12:40/12:45 UTC** (Cossec report)
Cap chalutage « Eridan » (rapport Cossec)	**"Eridan" trawling course** (Cossec report)

Figure 1: Position of the trawlers "Bugaled Breizh" and "Eridan" at 11:00 UTC and at the time of the sinking


chalutier
funes
chalut
fourches
panneau
de chalut



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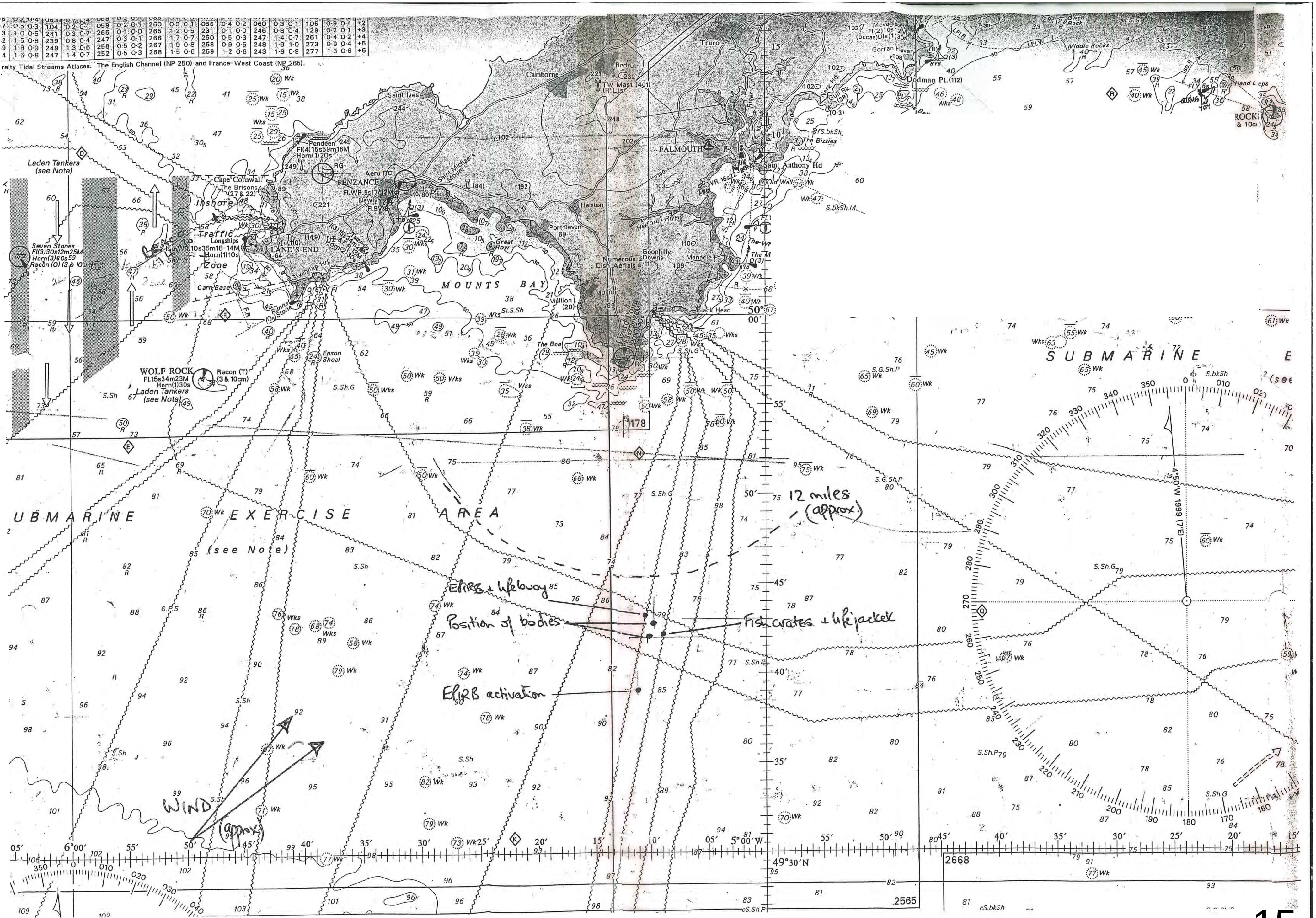
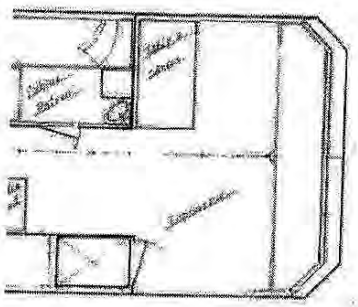


Admiralty Tidal Streams Atlases. The English Channel (NP 250) and France-West Coast (NP 265).
Laden Tankers (see Note)
Inshore Traffic Zone
Seven Stones
Cape Cornwall
PENZANCE
LAND'S END
WOLF ROCK
MOUNTS BAY
Camborne
Redruth
Truro
Saint Ives
FALMOUTH
Saint Anthony Hd
Helston
Porthleven
Helford River
Goonhilly Downs
Manacle Pt
Black Head
Mullion
Dodman Pt.
Gorran Haven
Mevagissey
SUBMARINE EXERCISE AREA (see Note)
12 miles (approx)
EPIRBS + lifebuoy
Position of bodies
Fish crates + lifejacket
EPIRB activation
WIND (approx)
1178
2668
2565


BUGALEC-BREIZH


GV642421


Bugaled Breizh

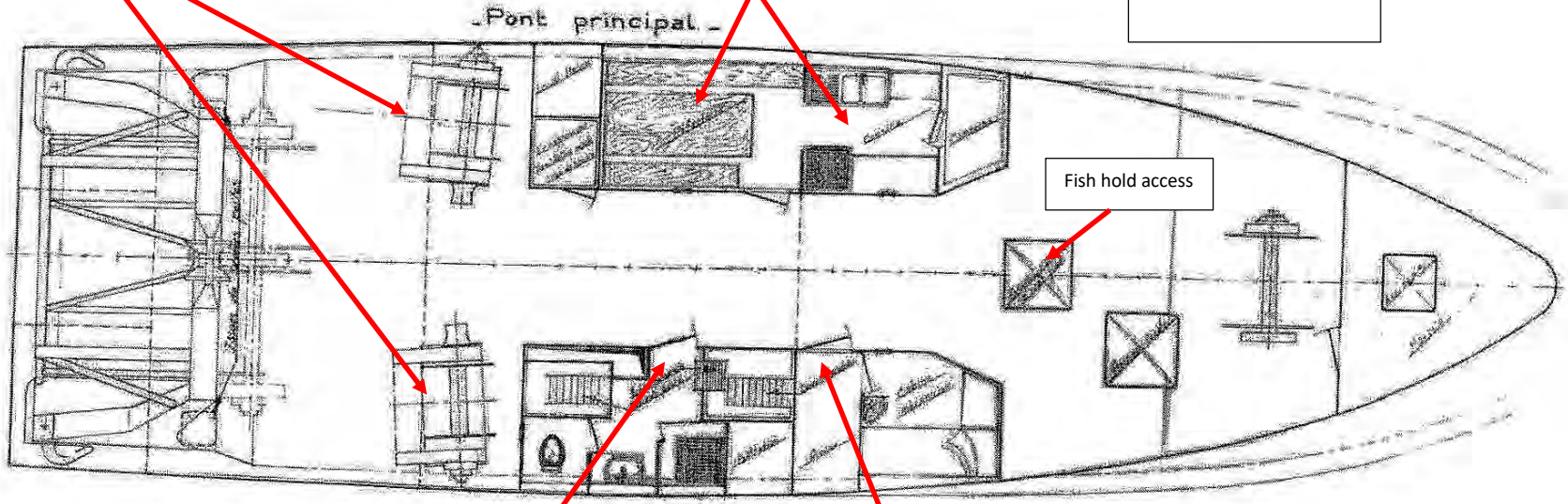


Wheelhouse Layout

Winches

Mess Room/Galley

Main Deck Layout



Fish hold access

Entrance to engine room & crew accommodation

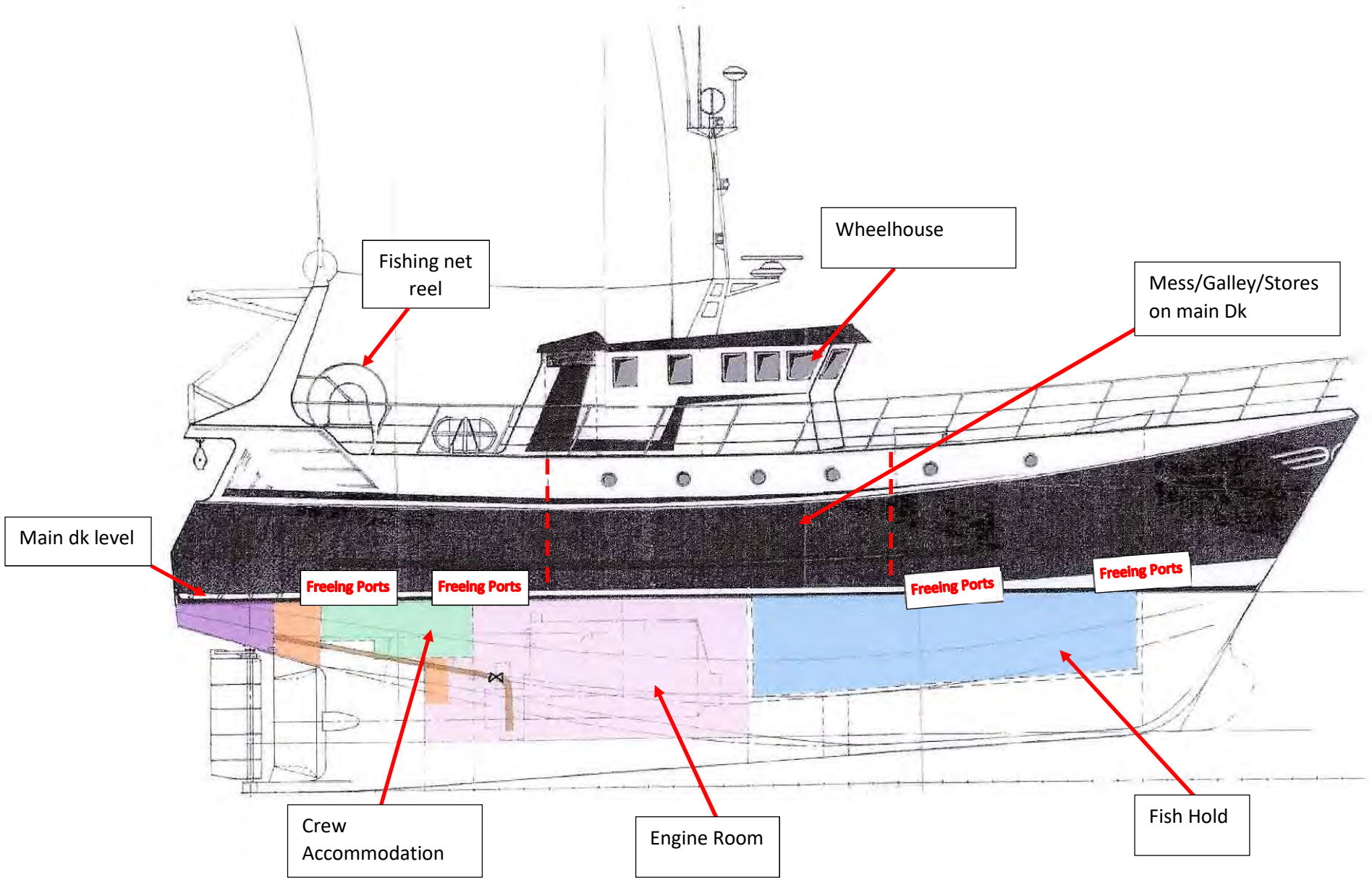

Fishing net reel
Wheelhouse
Mess/Galley/Stores on main Dk
Main dk level
Freeing Ports
Freeing Ports
Freeing Ports
Freeing Ports
Crew Accommodation
Engine Room
Fish Hold

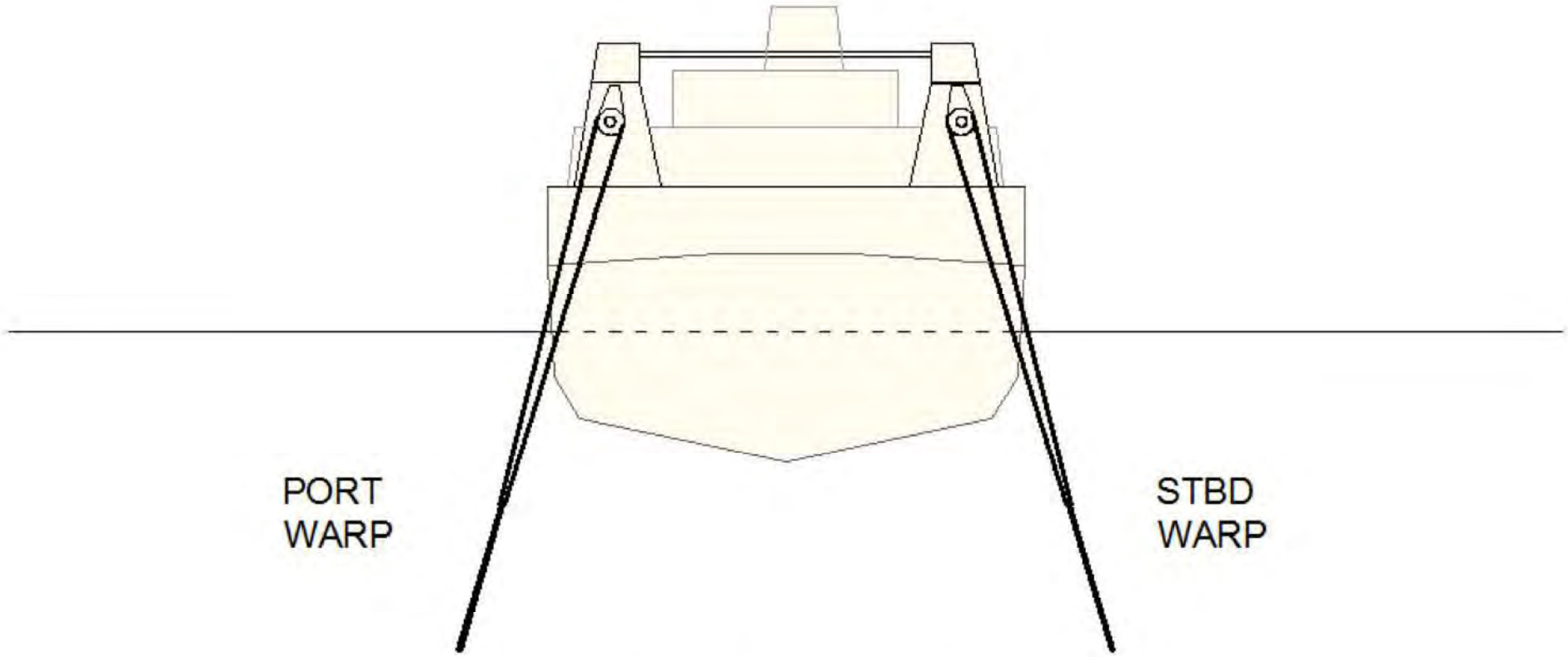
Figure 9. Sea appearance in winds of Force 4 (© I.G. McNeil)

Figure 10. Sea appearance in winds of Force 5 (© I.G. McNeil)

Sea states based on the Beaufort Scale

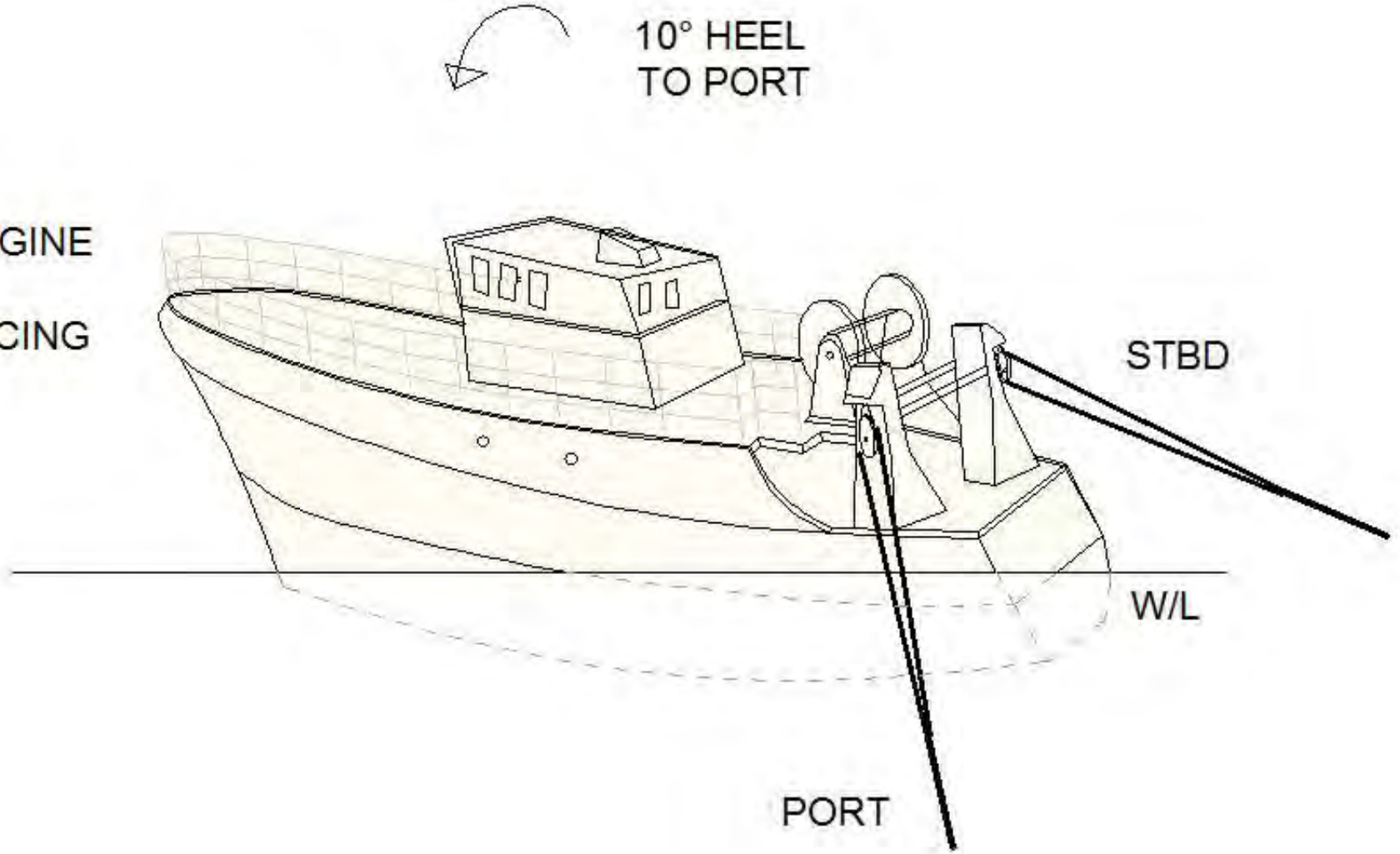
Figure 11. Sea appearance in winds of Force 6 (© I.G. McNeil)

Figure 12. Sea appearance in winds of Force 7 (© G.J. Simpson)



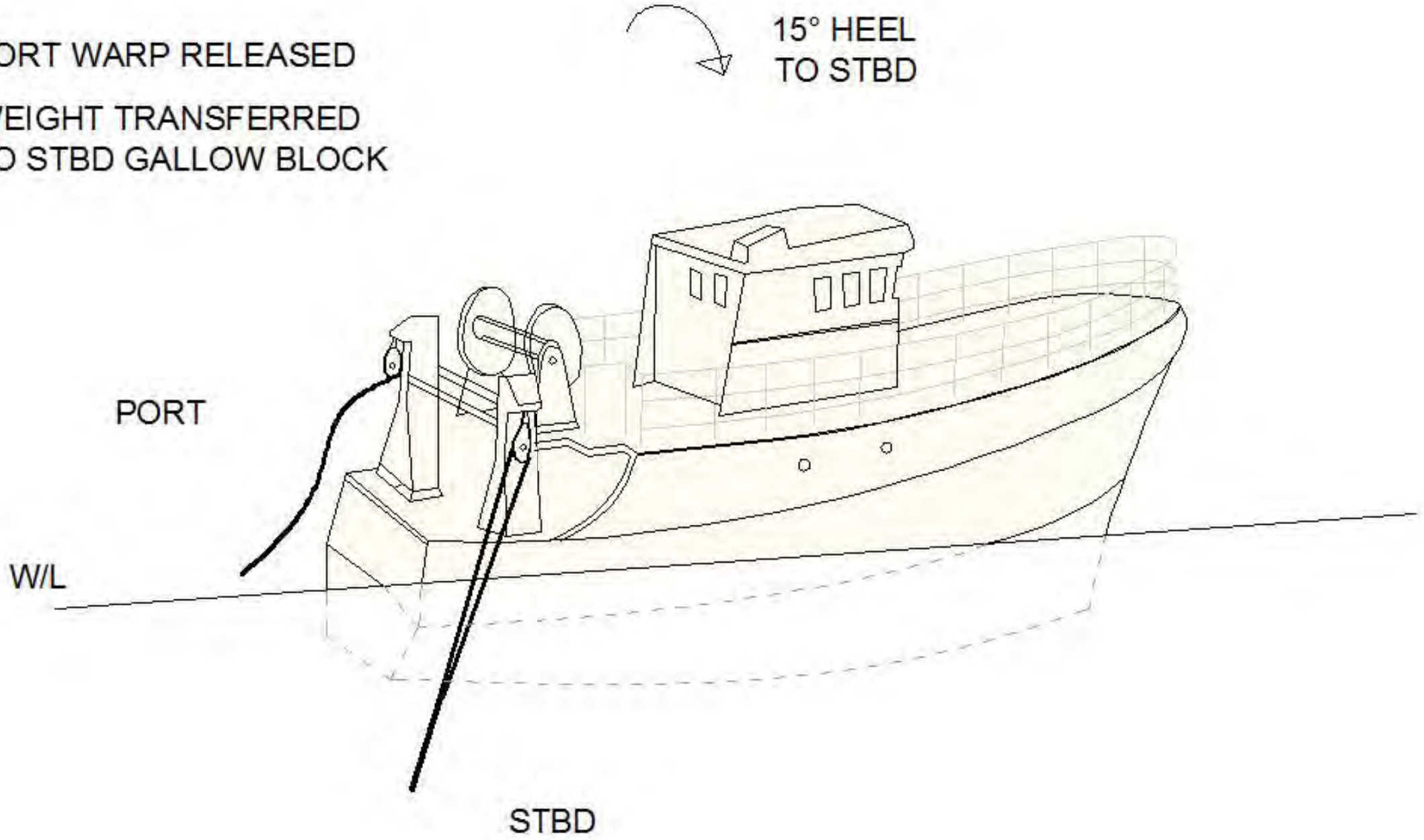
VIEW FROM AFT

TURN TO PORT AS ENGINE AHEAD & FORCE ON GALLOW BLOCK INDUCING A HEELING MOMENT



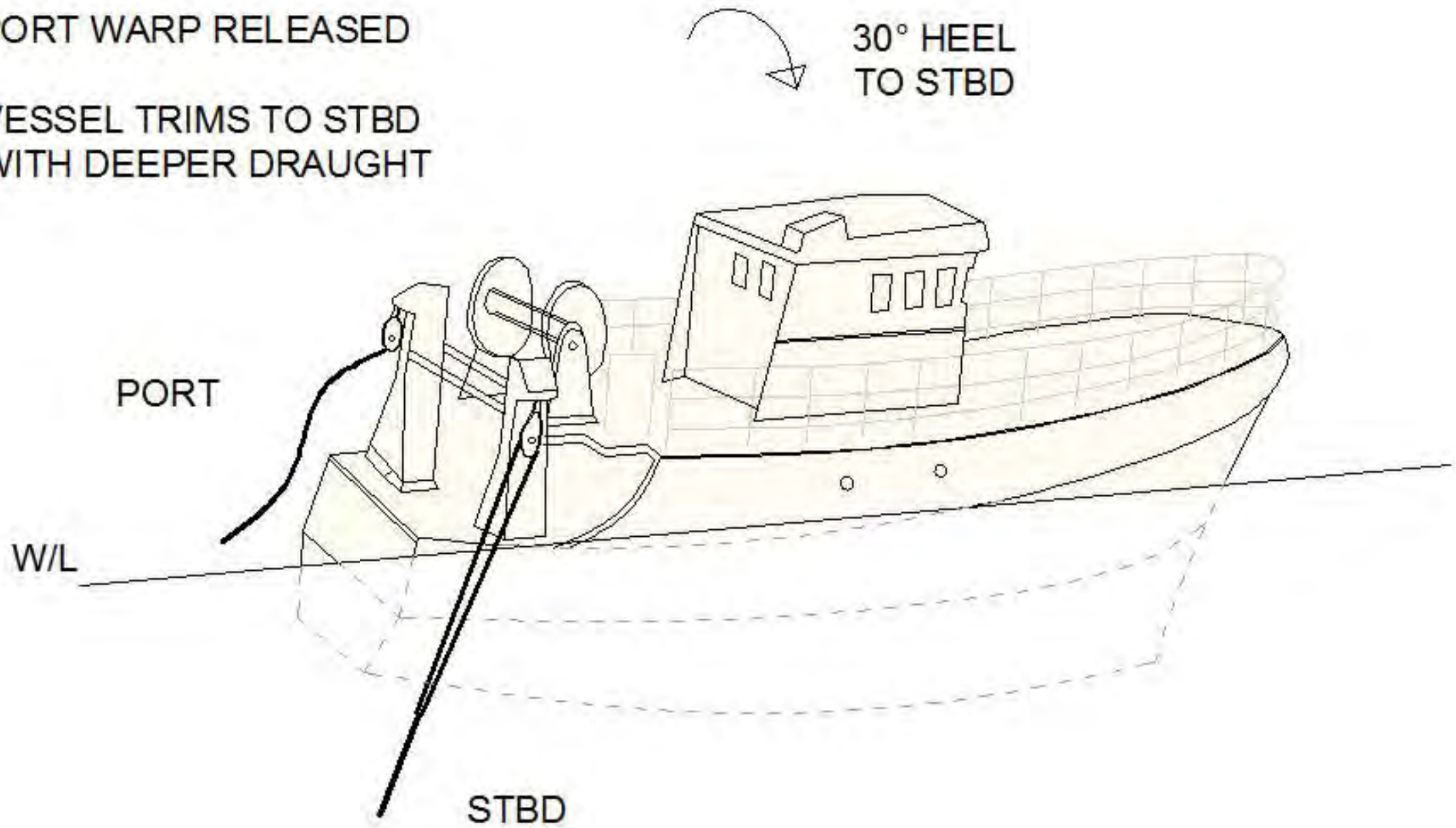
PORT WARP RELEASED

WEIGHT TRANSFERRED
TO STBD GALLOW BLOCK



PORT WARP RELEASED

VESSEL TRIMS TO STBD
WITH DEEPER DRAUGHT



TORBAY 150400Z – 160000Z

DOLFIJN 151200Z – 160000Z

U26 150000Z – 151000Z

TURBULENT 160930Z – 161630Z

U22 150800Z – 160000Z

FCS2161

SOUTH COAST EXERCISE AREAS

NOT TO BE USED FOR NAVIGATION

Produced by FCS at the UK Hydrographic Office, Taunton.
November 2015.

FCS OPERATIONAL GRAPHICS

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Units Alongside
SCEPTRE
SOVEREIGN
SPARTAN
SPLENDID
SUPERB
TALENT
TIRELESS
TRAFALGAR
TRIUMPH

TURBULENT (Alongside) – 14 Nov 03 – 160900Z Jan 04

U26 (Alongside) – 150748Z Jan 04 – 151545Z Jan 04

BUGALED BREIZH
151253Z JAN 04

TORBAY (Dived) 151253Z JAN 04
107nm West of BUGALED BREIZH

DOLFIJN (Surfaced) 151253Z JAN 04
11nm South of BUGALED BREIZH

U22 (Surfaced) 151253Z JAN 04
43nm South-East of BUGALED BREIZH

INQUESTS INTO THE DEATHS OF YVES MARIE GLOAGUEN AND PASCAL LUCIEN LE FLOCH ARISING FROM THE LOSS OF THE VESSEL BUGALED BREIZH ON 15 JANUARY 2004

GLOSSARY OF KEY TERMS

Term	Definition
Alongside	Docked.
ANG10	The call sign assigned to the Anglian Princess, a tug contracted to HM Coastguard which was deployable to assist in search and rescue and salvage operations.
ASWEX	Anti-Submarine Warfare Exercises coordinated by NATO allied countries.
CASEX	Combined Anti-Submarine Warfare Exercises.
CECLANT	French equivalent of CINCFLEET (Commandement en Chef pour l'Atlantique).
CINCFLEET	The Commander-in-Chief of the Fleet was, at that time, the Department responsible for the operations of the ships, submarines and aircraft of the British Royal Navy.
CINCGERFLEET	The Department within the German Navy responsible for the operation of the German Fleet, called the Commander-in-Chief.
COMDEVFLOT	The submarines based at Devonport.
COMOPS	Commander of Operations.
COOS	This means 'clear of other serials'. An order requiring units to keep clear of an exercise.

Cross Gris Nez	One of the seven French "CROSS" centres (Centre régional opérationnel de surveillance et de sauvetage) operated by the French Maritime Affairs Administration. Broadly speaking, the French equivalent of HM Coastguard.
CTF 311	Commander Task Force 311 is the UK's submarine operating authority (see also definition of "SUBOPAUTH"). It is based at Northwood HQ.
Degaussing	A process by which unwanted magnetism of a submarine is removed or decreased. Also called magnetic ranging.
DTG	Date time group.
Fleet Exercise Area Programme	A computer system which records the location of exercises for which approval has been granted.
FOST	The Flag Officer Sea Training department controls the South Coast Exercise Areas. It is a department of the Navy, mainly based at Devonport HQ.
FVSO	Fishing Vessel Safety Officer. This is a designated officer who would typically be based on a surface ship during an ASWEX exercise to assist with ensuring the safety of fishing vessels by making regular broadcasts to fishing vessels
HNNB Devonport	Her Majesty's Naval Base, Devonport, located in the west of Plymouth.
Inmarsat C device	A two-way satellite communication device
LIZ3	The call sign assigned to the Lizard Lifeboat.
MFDSC	Medium Frequency Digital Selective Calling.
MRCC	Maritime Rescue Co-Ordination Centres.
MUL1	The call sign assigned to Mullion Coastguard.
NATO SMAA	NATO Submarine Advisory Authority. It is based at Northwood HQ and its role is to determine whether there is any interference with submarines operating in their areas of responsibility (e.g. two submarines wanting to go to the same area of water).

NAVTEX	Navigational Tex. An international automated medium frequency direct printing service for the delivery of navigational and meteorological warnings and forecasts, as well as urgent maritime safety information.
OPCON	Operational Control Command Control and Information System. An automated message handling system and database used by CINCFLEET at Northwood HQ.
PAFF	The call sign assigned to the Dolfijn by MRCC Falmouth
PEN3	The call sign assigned to RNLI Penlee Lifeboat.
Plymouth Sound	Deep inlet in the English Channel near Plymouth.
QHM Movement Signals	Queen's Harbour Master Movement Signals. The Queen's Harbour Master coordinates movement within any given port. They produce a daily movement signal, promulgated the day before, to inform vessels of planned movements in and out of the harbour.
R169	Rescue Helicopter with call sign R169.
R193	Rescue Helicopter with call sign R193.
RNAS Culdrose	Royal Naval Air Station Culdrose is a Royal Navy airbase near Helston on the Lizard Peninsula in Cornwall.
RNPSIB	Royal Navy Police Special Investigation Branch (previously RNSIB).
RWA	The call sign assigned to HMS Tyne, a fishery protection vessel.
S08	Sierra 08. A search and rescue aircraft from Culdrose deployed on 16 January 2004.
SMAA	Submarine Advisory Authority.
SMP	Submarine Publication.
SMP95	The Submarine Publication on Fishing Vessel Avoidance. It contains the Code of Practice of Submarine Operations and Fishing Vessels.
SOA	Submarine Operating Authority.
SOPAREA 1	A group of authorised exercise areas.
Southern Fleet Exercise Areas	Areas of sea which are under the control of CTF311.

SUBFACTS broadcasts	Under the Code of Practice for conduct of submarine operations in the vicinity of fishing vessels, dived submarine operations are broadcast to civilian shipping vessels (including fishing vessels) by Coastguard broadcasts over VHF radio and over "Navtex" every 6 hours.
SUBFLOT	A catch-all term for all UK submarines.
SUBMHN	The Submarine Moving Haven confirms the points between which a submarine can manoeuvre.
SUBMODE	The SUBMODE confirms how a submarine is authorised to transit (e.g. Surfaced or Submerged).
SUBNOTE	Submarine Notice. This is a formatted message issued by the relevant submarine operating authority. It authorises a submarine to move and informs others of that movement. It sets out whether a submarine has permission to dive, when it can dive and where it can dive.
SUBOPAUTH	UK Submarine Operating Authority (see also definition of "CTF 311").
Surface picture	A plot of any vessels around a vessel obtained from that vessel's sensors or by its crew undertaking visual observations.
WPP	Weekly Practice Programme. This is a document (produced each week by FOST) which records military activity, planned exercises and dived submarine movements which have been approved in the relevant area.
XO (Executive Officer)	Second-in-command of a submarine.
XV697	Early warning helicopter with call sign XV697.

4 November 2021

INQUESTS INTO THE DEATHS OF YVES MARIE GLOAGUEN AND PASCAL LUCIEN LE FLOCH ARISING FROM THE LOSS OF THE VESSEL BUGALED BREIZH ON 15 JANUARY 2004

GLOSSARY OF KEY TECHNICAL TERMS

Term	**Definition**
Abaft	In or behind the stern of a ship
Aft deck	The open deck towards the stern of a vessel.
Ballast chains	Heavy duty chains used to connect the lower and upper wings of the trawl net to the bridles. See Appendix B-2 of BEAmer report (DA.125).
Bobbins	A solid rubber wheel on the ground rope or gear of the net to enable the net to roll over hard ground and reduce damage to the bottom of the net.
Bottom stern trawler	Vessel engaged in trawling using a bottom trawl net to catch fish on the seabed.
Bottom trawl net	A large cone-shaped net which is towed across the seabed and spread horizontally by trawl doors.
Bow	Front of the vessel.
Bridge	The upper part of the vessel which contains the wheelhouse.
Bridles	Wires connecting the trawl doors to the net. Also called “sweeps” or “arms”.
Bulwark	A steel plating erected around the outboard edge of the main deck to protect the deck from the entry of seawater.
Cable drums	The main wire holders on the starboard and port sides of the winches for housing the warps.

Cod-end	The end of the trawl net which collects the fish. Also called the “bag”.
Declutching	The act of disengaging the wire or cable drum from the hydraulic motor of the winch assembly.
Draft	The measurement between the keel of the vessel and the water level at which it is floating.
Echo sounder transducer shoes	A 30 cm long steel plate, 8mm thick, the shape of an elongated hexagon along the vessel's longitudinal axis, welded onto the outside of the hull on which the transducer is fitted.
EPIRB	Emergency Position Indicating Radio Beacon. One of the primary means of alerting search and rescue authorities when a vessel is in distress. It can be activated manually or automatically.
Fish hold	A weathertight compartment in a fishing vessel used for storing fish.
Foot rope	The rope along the lower edge of the trawl net is called the foot rope. The footrope usually has some form of weighted ground gear attached to it.
Fork	A three-way connection between the warps, the upper bridle and the trawl door.
Fork leg	A fork rig set up where the top bridle of the trawl is attached to the warp ahead of the trawl door.
Free surface effect	The reduction of stability caused by liquids in slack tanks or compartments moving due to a vessel’s motions. This adverse effect on the stability is referred to as a loss in GM or as a virtual rise in vertical centre of gravity KG.
Freeboard	The height of the main deck above the waterline.
Freeing port	An opening in the bulwark similar to large drain hole which allows water shipped on deck to run freely overboard. Also called a “scupper”.
Ground gear	Part of a net designed to be in contact with the seabed.
GZ curve	A diagram showing the righting lever at each angle of heel.
Headline	The rope along the upper edge of the trawl net. The headrope/line has floats attached to it to lift it clear of the seabed and hold the net open in a vertical direction.
Headrope	Another word for headline.

Heel	A vessel is said to be heeled when she is inclined by an external force such as the action of waves or wind.
Hull	The watertight body of a vessel.
Keel	The bottom-most longitudinal structural element on a vessel.
Lightship	The actual weight of a ship with no fuel, passengers, cargo, water etc. onboard.
List	A vessel is said to be listed when she is inclined by forces within the vessel like shifting of cargo, water or fuel.
MAIB	Marine Accident Investigation Branch.
MRCC	Maritime Search and Rescue Coordination Centre.
Otter board	See definition of "Trawl door".
Paying out	Process by which the warps are released outboard during the shooting of the gear.
Port	The left-hand side of a vessel.
Righting lever	The perpendicular distance, measured in metres, between the centre of gravity of a vessel and the vertical line of action of the buoyancy force, acting through the centre of buoyancy.
Righting lever curve	See definition of "GZ Curve".
Shackles	A semi-circular or 'D' shaped metal bar with an eye in each end to use a pin to connect wires or ropes.
Starboard	The right-hand side of a vessel.
Statical stability	The static stability defines the ability of a vessel to regain its upright equilibrium position from an angle of heel. It gives the stability information of a vessel for a condition when the outside water is static (i.e. calm). The static stability of a vessel can be typically expressed in terms of GM (Metacentric Height) and GZ (Righting Lever) with the units in metres.
Stern	The rear of a vessel.
Tickler chain	A chain towed ahead of the ground gear to disturb fish on the seabed.
Tow	The action of trawling the fishing gear along the seabed.
Transducer	A sensor which is directed towards the seabed and which transmits and receives radio signals in order to measure depth.

Transducer cable conduit	A steel piping arrangement in which the echo sounder transducer electrical wires are kept protected between the transducer and receiver unit.
Trawl door	A large steel or wooden board used as one of a pair to keep the mouth of the trawl open. Also referred to as “otter doors” or “otter boards”.
Trawl rig	Term used to cover all the components in a trawl net rig including trawl doors, bridles and net etc.
Trawl wings	See definition of “Wing ends”.
Trim	The angle by which a vessel tilts forward or aft relative to its baseline. It is measured by the difference in drafts in the forward and aft ends of the vessel.
Upper wings	Upper part of the wing net.
Vanishing stability	The point where the GZ curve meets the horizontal axis is called the point of vanishing stability, since the righting lever becomes zero at this point. It is the angle of heel at which the sign of the righting levers changes from positive to negative.
VHF	A communication radio designed to operate using a very high frequency.
Warps	Wire connecting the trawl rig to the fishing vessel.
Weather deck	A deck exposed to the elements.
Webbing	Netting.
Wheelhouse	The structure from which a vessel is navigated and directed.
Winches	The machines for hauling and storing trawl warp.
Wing ends	The ends of the trawl net nearest the boat.
Wing lines	The side ropes along the wing ends of the trawl net.

4 November 2021