

Case study – The Rabaul Queen tragedy, 2 February 2012

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*“In my tears, I hope that the National Maritime and Safety Authority improves the safety of passengers who travel by sea. I look forward to PNG not losing any more precious lives....
... modern technology is now at hand and such tragic accidents should be a thing of the past.”*

*Reverend Oala Arua, father of Arua Bar, chief engineer of MV Rabaul Queen (deceased),
Rabaul Queen injustice – The National, 3/2/2017*

Introduction

We will refer to this case study several times during this course. The MV Rabaul Queen was a passenger ferry that sank in the Vitiaz Strait, between the New Guinea mainland and New Britain, during an active monsoon burst on 2 February 2012. The official Commission of Inquiry estimated that between 146 and 165 lives were lost. The weather in the area had been correctly forecast by the Papua New Guinea National Weather Service, but the ship's owner had instead provided his own 'homemade' forecast to the vessel's captain, which underestimated the severity of the conditions.

The meteorology of the case and correctness of the official forecast is well established. However, the horrendous death toll and circumstances resulted in a wide-ranging inquiry, at which the PNG National Weather Service were required to testify.

The Inquiry report is exceptional in its detailed and very direct discussion of the circumstances around the sinking, giving us many insights into the factors that can contribute to a weather-related disaster.

The Commission did not suggest that the National Weather Service were in any way responsible for the disaster, but reserved their criticism for the ship's operator (as quoted below, and with further commentary in the report), and for the National Maritime Safety Authority.

However, the Commission did make some recommendations for the National Weather Service to consider, which can be found in the report. It is perfectly normal in such reports for suitable recommendations for service improvements to be made, and an important opportunity for discussions about how these improvements could be implemented and supported.

Some essential key passages are quoted below, but course participants are also encouraged to browse through the Inquiry report. The report is very long, so focus on the areas that interest you, but take the chance to think about the 'big picture' and how a combination of many factors contributed to a terrifying and disastrous outcome with much loss of life.

By seeing our marine services within the wider picture, and understanding the consequences of an overall system failure that fails to protect the safety of lives at sea, we can also see opportunities to work with partner agencies and forecast users to improve safety and improve the effective use of our forecasts.

POST DISASTER INQUIRIES

The Rabaul Queen Inquiry report is an example of a common challenge for a National Meteorological and Hydrological Service (NMHS) – a formal post-disaster inquiry. Such an inquiry is always difficult and is a time for care of each other as staff members. Inquiry officials need the most complete and accurate account of events as possible, will be examining warnings issued, and requiring testimony from staff. Often, other parties involved will be seeking to 'pin the blame'.

However, inquiry reports are also excellent sources of insights about service improvements, validations of the importance of forecasts and warnings, validation of services in the face of media criticism and recommendations to be discussed with Government for funding and support.

Virtually every NMHS in the world will have to deal with such an inquiry at some stage. As you browse through this case study, ask yourself how you might approach such an event, and how you might contribute to preventing it.

Weather conditions

The general conditions during the period were a strong to gale force northwesterly monsoon flow, which due to the geography of the Vitiaz Strait and exposure to a long northwesterly fetch, created severe conditions in the area of the sinking.

In an inquiry report into a weather-related disaster, observations available and witness accounts will always be carefully compared to the forecasts and warnings issued. This was the method used by the Rabaul Queen Inquiry, which quoted an impact-based forecast from the NWS and then compared it to the information made available by the ship's owner, Captain Sharp, to the ship's Master. The Inquiry then used observations to show that the NWS were correct.

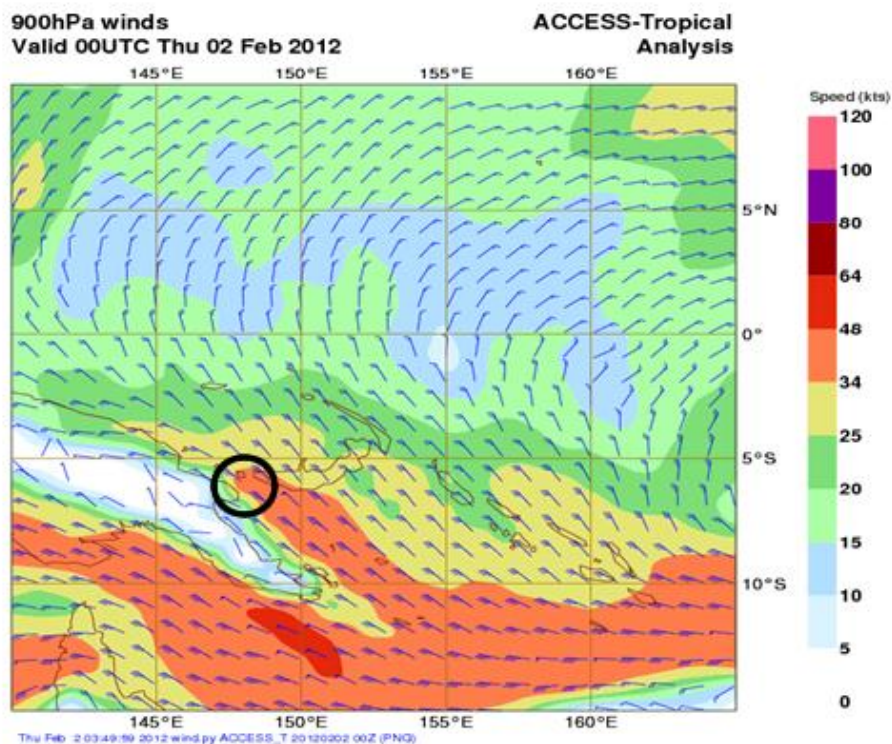


Figure 1 - Gradient level wind flow on 2 February 2012, shown in ACCESS-Tropical model. The model resolution is insufficient to resolve the fine detail of winds in the Vitiaz Strait (black circle). Courtesy Australian Bureau of Meteorology

Key quotes about the weather and the weather forecasts

“The weather and sea condition forecasts issued by the Papua New Guinea National Weather Service (the Service) show that on 1 February 2012, the following gale wind warning was issued ‘northwest winds of 34/48 knots are expected to persist for the next 24 hours causing very rough and high seas’ for the waters of Fincaffen and the Vitiaz Strait.

During his evidence to the Commission, Captain Sharp presented an ‘in house’ document that he himself prepared on 31 January 2012 regarding the weather. This ‘weather report’, which was transmitted to his ships on 31 January 2012, forecast north-westerly winds of 15 – 20 knots between West New Britain and the Vitiaz Strait from 31 January 2012 to 2 February 2012. From Lae to the Vitiaz Strait, northwest winds of 20 – 30 knots were forecasted.

Rabaul Queen’s Master stated that he relied solely on the ‘weather report’ given to him by Captain Sharp and did not obtain weather forecasts from any other sources including the Service. It is important to note that the Master had ample opportunity to contact Coastal Radio on 31 January 2012 and 1 February 2012 and obtain independent weather and sea forecasts for the voyage but failed to do so.

The Master also stated that the weather conditions were winds greater than 20 knots from the northwest and seas of 1.5 m, on the ship’s starboard quarter, when *Rabaul Queen* capsized. This evidence was supported, in part, by the Chief Mate who stated that the winds were 20 to 25 knots at the time. However, the Chief Mate goes on to say that the winds were 20 knots and the seas were 2 to 3 m while the ship was entering Vitiaz Strait, but still in the shelter of Umboi Island. He also states that at 0530, strong winds and waves of 5 to 6 m were pounding on the starboard side of the ship..... observations show that the weather and sea conditions in the area where *Rabaul Queen* sank were consistent with the forecasts and warnings issued by the Papua New Guinea National Weather Service on 1 February and the days following.” (page 10)

movement of passengers, combined with the wind exerting a force on the starboard side of the ship, resulted in the ship developing a port list.” (page 8)

The continued pounding of waves on the starboard side did not allow the ship to return upright between waves, and this eventually caused the port side to become submerged and the ship capsized. “Most of the survivors were thrown into the water while the ship was in the process of rolling to port, or they escaped from the upturned ship before it sank.” (page 9)

Non-use of the official forecasts

The Report is highly critical of the Ship’s owner, Captain Sharp, and its Master, Captain Tsiau, and repeatedly focuses on the non-use of the correct official forecasts, amongst other factors:

“...the Commission considers that Rabaul Queen was both unseaworthy and unsafe; and, hence, should never have departed Kimbe because, among other things:

- the ship was not suitable to operate in force 7 or above weather conditions;
- the ship was not manned and operated by a competent and appropriately qualified crew;
- the ship was not maintained in accordance with a considered and recorded maintenance plan;
- the ship was routinely carrying more passengers than specified by its Survey Certificate;
- the crew did not carry out effective safety training drills;
- the crew was not provided with appropriate procedures and guidelines in the form of a safety management system;
- the passengers were not mustered and provided with information about the ship, its life saving equipment and emergency signals after departure;
- the ship did not carry lifejackets suitable for use by all of its passengers (i.e. children and infant lifejackets were not carried);
- Rabaul Shipping and the Master did not consider the most appropriate weather forecast information either before the ship sailed, or during the voyage;
- the Master did not make regular contact with Coastal Radio as required; and
- the Master did not check the ship’s stability before departing port.” (page 13)

“...the ship’s Master was not aware of the warnings and, despite the increase in wind speed and wave height when the ship entered Vitiaz Strait, maintained the ship’s course towards Lae. He did not, at any time, consider remaining in the relatively sheltered Dampier Strait region, between Umboi Island and West New Britain.” (page 12)

“Captain Sharp knew that Rabaul Queen was unsafe to sail in conditions of force 8 or above. However, because he considered he knew better, he did not obtain weather forecasts from the Papua New Guinea National Weather Service or Coastal Radio. Rather, he produced his own in-house weather forecast from information which was not the most pertinent to the voyage in question” (page 14)

“If a shipping company is seeking a copy of the latest forecast or wind warning, they can contact the forecasting office at any time and a copy should be sent to them. However, if a member of the public wants a copy of the latest forecast or warning, they can only contact the forecasting office during office hours to request a copy. Despite the availability of this service, Rabaul Shipping did not do this at any time, with Captain Sharp preferring to use the websites of non-Papua New Guinea weather forecasting services.

“BECAUSE HE CONSIDERED HE KNEW BETTER, HE DID NOT OBTAIN WEATHER FORECASTS FROM THE PAPUA NEW GUINEA NATIONAL WEATHER SERVICE OR COASTAL RADIO. RATHER, HE PRODUCED HIS OWN IN-HOUSE WEATHER FORECAST FROM INFORMATION WHICH WAS NOT THE MOST PERTINENT TO THE VOYAGE IN QUESTION”

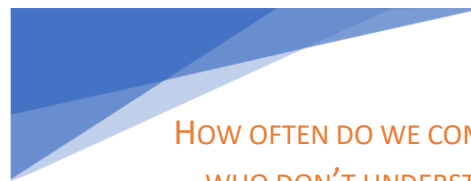
However, the Star Ships (PNG) Limited office in Alotau appears to have received weather forecasts in January and February 2012 (Exhibit 417). Captain Sharp said that he was not aware of this until after the ship sank. Clearly someone in authority considered, for good reason, that it was worthwhile to obtain forecasts and warnings from the Service, even if Captain Sharp did not hold this view.” (page 71)

“During his evidence, Captain Sharp... .presented an ‘in house’ document that he himself produced on 31 January 2012, regarding the weather, and distributed to the Rabaul Shipping offices by fax... .for forwarding to the Master of any ship which might be in port at the time. Captain Sharp referred to this document as ‘a weather report’. Earlier in the hearings, Captain Sharp... .told the Inquiry that he does not use any weather forecasts produced by the Papua New Guinea National Weather Service but rather uses information he obtains from websites of the American Joint Typhoon Warning Centre (JTWC) and the Australian Bureau of Meteorology (BoM). He obtained reports which cover the area of operation of his ships (Papua New Guinea coastal waters and the Bismark and Solomon Seas) and then he compiled his own ‘weather report’ document for distribution.” (page 74)

“In not making use of the Papua New Guinea National Weather Service coastal and ocean forecasts and strong and gale wind warnings, Captain Sharp did not properly understand the serious weather and sea conditions facing any ship that was proceeding through Vitiaz Strait on the days leading up to the expected passage of Rabaul Queen.

The Master of Rabaul Queen was happy to accept Captain Sharp’s forecast without question on 31 January and did not seek to obtain any other forecasts or warnings after the ship departed Rabaul. Because of the inadequacy of the information provided to him in Rabaul, he was not aware that there was a strong wind warning current on 31 January or that there was a gale wind warning in place for West New Britain and Vitiaz Strait, issued on 1 February.” (page 77)

“Captain Tsiau said during his evidence that he relied solely on the ‘weather reports’ given to him by Captain Sharp and did not obtain weather forecasts from any other sources including the Service. It is important to note that Captain Tsiau had ample opportunity to contact Coastal Radio on 31 January 2012 and 1 February 2012 and obtain independent weather and sea forecasts for the voyage but failed to do so.” (page 118)



HOW OFTEN DO WE COME ACROSS USERS WHO DON'T UNDERSTAND OR USE OUR FORECASTS AND WARNINGS?
WHAT CAN WE DO TO IMPROVE OUR COMMUNICATION WITH THEM?
HOW CAN WE INFLUENCE BETTER SAFETY AND EFFECTIVE USE OF OUR SERVICES?

Response to conditions

Regardless of the accuracy or not of the forecasts, the Report noted that there were issues with the response to the actual conditions:

“Captain Tsiau gave evidence that he had sailed *Rabaul Queen* in conditions of force 7 or above winds on numerous occasions between February 2003 and March 2007 despite the Survey Certificate at the time specifically prohibiting it. Captain Tsiau also stated that he would have sought shelter if he knew of the gale wind warnings.

In that regard, it is worth mentioning that Rolando Lamparero, the operations head of RD Fishing, gave evidence that several of RD Fishing’s ships (*Dolores 839* and *Dolores 849*), which are both considerably bigger than *Rabaul Queen* sought shelter from the conditions on 1 February. These ships were sheltering near Cape Hollman, which is at the tip of the Willaumez Peninsula to the west of Kimbe. *Rabaul Queen* was operating in this same area on 1 February 2012. However, contrary to what the Captain Tsiau told the Commission, he did not seek shelter despite the weather and sea conditions. This, again, demonstrates Captain Tsiau blatant disregard for the safety of the ship, its crew and more importantly, its passengers.” (page 119)

Could the disaster have been averted?

A critical passage in the Report focuses on the phrase ‘Act of God’, which is often applied in circumstances such as these:

“Captain Sharp maintained that the cause of the disaster was an Act of God and that three large waves rose up and sank the ship. Captain Sharp said, ‘*It was one of those things that happen in nature and the ship was in a spot where it was overwhelmed by three large waves.*’

Captain Sharp accepted the definition of an Act of God put to him by Counsel Assisting as: ‘*Casualty due to extraordinary natural causes and circumstances, to which there was no human contribution and which could not have been foreseen or averted by the exercise of any amount of reasonable intelligence or endeavour.*’

“For reasons set out elsewhere in this Report, the Commission has no hesitation in finding that the cause of the disaster was not an ‘Act of God’. There were human contributions that lead to the disaster and it should have been foreseen and averted by the exercise of reasonable intelligence or endeavour by Captain Sharp and the Master of the ship.” (page 132)

The Commission then went on (after much more criticism of Capt. Sharp) to analyse the actions of the National Maritime Safety Authority, analyse the search and rescue effort, and then make proposals for measures to be taken. Only two of the thirty-four recommendations touch on the NWS:

24. The National Weather Service should take steps to improve the reliability of its weather facsimile service. The Service should also ensure that appropriate and up to date weather information is available on a publicly accessible website and investigate the feasibility of the dissemination of weather information through social media like Facebook and Twitter.

25. The National Weather Service should consider providing warnings on its weather forecasts similar to those issued by the Australian Bureau of Meteorology that warn ‘Wind gusts can be 40 per cent stronger than the averages given here, and maximum waves may be up to twice the height.’ (page 212)

From this, we can observe that, even in circumstances where extremely severe criticism is being directed towards other parties, there are often still going to be recommendations on how meteorological marine services, including communications with users, can be improved. Bear this in mind as we progress through the course.



Figure 3 The Rabaul Queen Ferry arriving in Kimbe Port, West New Britain, Papua New Guinea. Michael Pennay Creative Commons license [CC BY-SA 3.0](https://creativecommons.org/licenses/by-sa/3.0/)