

Reprint **Island Tides**

Visit www.islandtides.com for more interesting articles on other BC, national & international topics

Reprint from Volume 19 Number 8

April 19, 2007

Commentary by Patrick Brown

Ferries on Autopilot – I

It is now over a year since the sinking of the ferry *Queen of the North*. BC Ferry Services is saying the mishap was simply ‘human error.’ But wars, divorces, and shipwrecks aren’t that clear-cut, as we all know.

We have now seen a preliminary finding by the Transportation Safety Board (TSB) and a Divisional Inquiry report from BC Ferries. We have also had the benefit of a wide-ranging review of safety at BC Ferries by former Provincial Auditor George Morfitt (who, incidentally, remarked on how long it took to publish safety reports). All these documents have been reported in *Island Tides*—visit our archives www.islandtides.com to view these articles.

Still to come are the results of an RCMP missing persons investigation, possible disciplinary hearings for members of the crew, and a Transportation Safety Board final report, which is not expected to assign blame.

All this is taking time. In the meanwhile, before the other reports are published, here is an analysis of all three reports and other pertinent documents, with some interesting conclusions and conjectures about this very disturbing accident.

We will have to begin at the beginning (again) so bear with us.

What Happened

The *Queen of the North* should have changed course opposite Saintry Point at the south end of Grenville Channel, but this course change was never made. Since the vessel was on autopilot, it continued in a straight line until it ran into the north coast of Gil Island, was holed, and drifted off and sank.

It was around midnight, dark and probably overcast, and it may have been raining. At the beginning of the watch, there were three crew on the bridge—two officers and a deck-hand. One officer left the bridge before the course change was to have been made. The deckhand, on duty as helmsperson and lookout, reported that she did not know the ship’s position, and saw nothing until the trees of Gil Island came into view. The third crew member, the Officer of the Watch, was on the bridge throughout. On legal advice he refused to testify at the BC Ferry Services Inc inquiry.

The *Canada Shipping Act* requires three people on the bridge when the vessel is being hand-steered, and two when the vessel is on autopilot. Regulations are silent on how many are required when a course change is made while on autopilot, referring only to ‘the ordinary practice of seamen’. However this might be interpreted, it clearly includes keeping a proper lookout, and confirming the position and speed of the vessel by

as many means as possible.

In addition to the autopilot, the bridge was equipped with two radar sets (which would show the position of the ship in reference to nearby Islands and other vessels) and an Electronic Chart Display (ECD) which would show the position of the ship determined from the satellite-based Global Positioning System (GPS), superimposed on a chart of the area.

The ECD computer successfully recorded the ship’s position until the moment of sinking, but there is some question whether the screen was turned on. The BC Ferries report does not settle this vital question, saying only that the location of the ship ‘was available’ to the bridge crew. The report notes separately that some deck officers had found the display so bright it interfered with night vision.

What Kind of Human Error?

BC Ferries’ management summarize its report as concluding that the accident was due to ‘human error’. This conclusion appears to have been justified on the basis of evidence that all the ship’s machinery and equipment was operating properly (with the possible exception of the ECD screen).

This conclusion leaves out a third factor in the piloting equation: the command and control procedures under which the bridge crew worked. These procedures are clearly BC Ferries’ responsibility, and should have been in written manuals (which have, interestingly, not been referred to in the reports). They would have included:

1. Where on the voyage, and under what conditions, it was safe to use the autopilot, and where the vessel should be hand steered.
2. When the autopilot course was to be changed, who was responsible for making the change, who was responsible for confirming that the change had been made, and how it should be confirmed that the vessel was properly settled on the new course.
3. What navigational aids, on and off the ship, were to be used to confirm the vessel’s position, speed, and direction.
4. The proper procedure to change from hand steering to autopilot, and back.

This last point was addressed by a posting in the wheelhouse by the Senior Master and the Master of the second crew of the *Queen of the North*. The existence of these instructions may have reflected a suspicion that some bridge crew members were not familiar with the procedure.

However, the BCFS report indicates that, in some unspecified way, the procedure set out was not used by the crew on duty the night of the accident.

According to evidence given, the Officer of the Watch gave the command to disengage the autopilot and turn sharply to port just before the vessel hit Gil Island. The helmsperson stated she did not know how to do this, probably confirming the Senior Master's apprehension.

It would be interesting to know whether there have been other incidents in the fleet which have required unexpected disengagement of the autopilot, and what has been learned from them. No other accidents of this type appear to have been reported, but there appears to be no effective company procedure for reporting 'near misses.'

Appropriate Use of Autopilot

There is no evidence of any plan for the voyage that indicates where it was appropriate to use the autopilot. Apparently, it was to be left to the judgement of the deck officers. Here it may be relevant that, in Mr Morfitt's opinion, there is a poor understanding of 'risk assessment' at BC Ferries. While few would argue with the use of autopilot in the open sea, and it is possible that the autopilot can do a better job of maintaining a straight course than a human helmsperson, we have been unable to identify any rules which suggest the appropriateness of the use of an autopilot within, say, a nautical mile of the land ahead or to either side. The combination of narrow channels, a pitch black night, a vessel proceeding at full cruising speed, and just two on the bridge (at least one of whom saw nothing and did not comprehend the position of the ship) may well have crossed the threshold of safe autopilot operation.

Changing Course on Autopilot

The responsibility for changing the ship's course at Sainty Point clearly lies with the Officer of the Watch. But the course was not changed. The only person available to check that the course change had been made was the deckhand (also referred to as the helmsperson or Quartermaster). In this case, she did not know where the ship was, may not have been aware that a course change was necessary, quite possibly did not know how a course change was to be carried out on the autopilot, and in any event was hardly in a position to question the actions of a more senior member of the crew.

Again, the voyage plan did not appear to contemplate the risk to the vessel should it fail to make this course change. It therefore gave no instructions as to how or by whom it could be confirmed either that the ship had assumed the new course, or that the vessel was correctly headed to the next way point.

Navigational Aids

Whether one refers to the Safety of Life at Sea (SOLAS) international rules, or merely the 'ordinary practice of seamen,' it is clear that the vessel's course and position should be checked by as many means as possible. One would have expected that the crew of the *Queen of the North* would have looked for the next lighthouse, Point Cumming. Since it was the

location of the next course change, it should have been nearly dead ahead, and 7.8 nautical miles distant from Sainty Point. Unfortunately, this lighthouse has a nominal range of only five nautical miles, and, given the weather, may not have been visible.

It is hard to understand why this light is not stronger. Some years ago, the Coast Guard replaced many of the lights that had been used for navigation with lights which had less intensity, saying that ships equipped with GPS no longer needed them for navigation; it was only necessary to have lights strong enough so that ships did not run into the rocks or Islands on which they were situated. The Point Cumming light may have been a casualty of this kind of thinking. If so, the *Queen of the North* may also have been a casualty.

Responsibility

Two days after the sinking, BC Ferries notified the provincial government that they would claim it was an 'Event of *Force Majeure*' under the Coastal Ferries Contract. Commonly known as 'acts of God', the contract extends this definition to 'an event that is beyond the reasonable control and without the fault of a party'. In this contract, it specifically includes everything short of bankruptcy. The purpose of this declaration is to exclude BC Ferries from liability for the sinking under the contract, and to ensure the continuance of payments under the contract despite the discontinuance of the service.

The question, of course, is whether the sinking was 'beyond the reasonable control and without the fault' of BC Ferries.

Recommendations

The majority of the recommendations in the BC Ferries report deal with the training of bridge crew in use of the equipment. This was a deficiency that had been recognized by Morfitt, by the TSB, and obviously by others within BC Ferries. Recommendations also deal with written procedures, and also a significant change in watchkeeping hours. A recommendation that the 'illumination of navigational equipment' be reviewed is also included.

The root of the problem, however, may lie in the attitude to the Safety Management System within BC Ferries. Morfitt reports that despite the fact that it has been nine years since the SMS was implemented, there was not yet 'a high level of buy-in' to the system by all levels in the organization. He notes that safety is a sub-objective of 'asset management' and 'customer service.'

Senior management bonuses depend on the 'on-time performance' of the fleet, but not on its safety record. Surely, one incident such as the sinking of the *Queen of the North* should cancel out any management brownie points earned through any other evaluation criteria, including those of financial performance. ☞

© Island Tides Publishing Ltd. This article may be reproduced with this attribution, in its entirety, with notification to Island Tides Publishing Ltd.

'This article was published (April 19, 2007) in 'Gulf Islands, Island Tides'. 'Island Tides' is an independent, regional newspaper distributing 15,000-20,000 copies in the Southern Strait of Georgia from Tsawwassen to Victoria, BC.'

Island Tides, Box 55, Pender Island, BC, Canada.
Email: islandtides@islandtides.com.

Phone: 250-629-3660. Fax: 250-629-3838.
Website: <http://www.islandtides.com>
