

The principal purpose of the Transport Accident Investigation Commission shall be to determine the circumstances and causes of accidents and incidents, with a view to avoiding similar occurrences in the future, rather than to ascribe blame to any person.



## COLLISION REVEALS AIS VALUE

On a foggy morning on April 28 this year, the coastal ship *Anatoki* was approaching Tauranga Harbour when it collided with *Lodestar Forest*, a bulk carrier. *Lodestar Forest* was departing after disembarking its pilot but, when the accident occurred, both ships were within the compulsory pilotage area for the port of Tauranga.

There were no injuries and some minor damage to both vessels did not affect the watertight integrity of either.

The collision occurred with both the vessels' masters and the pilot lost situational awareness.

For the master and pilot on *Lodestar Forest*, situational awareness was lost when the correct rigging of the pilot disembarkation ladder took longer than expected. The master on the *Anatoki* lost situational awareness when he failed to appreciate that his vessel was still moving at slow speed. *Anatoki's* master failed to appreciate that his vessel was moving into an area where his radar had suggested a vessel was present. He believed the radar return to be false and did not mention it to his crew.

Significant factors contributing to the accident were:

- The bridge cultures on both vessels meant that senior crew on each vessel did not share all relevant information or question developing situations so that each bridge team shared an up to date picture of their vessel's situation and intentions.
- *Anatoki* had no automatic identification system (AIS) which would have given both vessels positive identification

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of each other and their positions on radar. The report noted that AIS was not required on *Anatoki* because its measured length was not sufficient due to a modification to allow operation in New Zealand waters, "despite its weight and size being typical of vessels that do."

- *Anatoki's* crew were not totally familiar with the radio systems as the manuals and labels were in Japanese
- A lack of a vessel tracking system for Tauranga Harbour which would have included shore-based observation and radio advice to masters of vessels in the area.



Other factors the subsequent Transport Accident Investigation Commission report said contributed to the incident were:

- Low crew alertness on *Lodestar Forest* due to disturbed sleep periods during the night as sailing was repeatedly delayed owing to poor visibility.
- Inadequate observance on both vessels of aspects of the international rules of collision avoidance, including the use of incorrect whistle signals by both, may have hindered the management of the collision once the situation was noticed.

*Anatoki* is a coastal bulk carrier built in Japan in 1992 and is owned and operated by Coastal Bulk Shipping 2007 Ltd. She was purchased by the company in December 2007, arrived in Nelson in January 2008 and registered under New Zealand registry.

After her arrival, and in spite of initial information to the contrary, Lloyds Register head office declined to accept the vessel into classification as a non-SOLAS coastal vessel because of her age. The owners were effectively unable to operate the vessel on the New Zealand coast.

Following a discussion with Maritime New Zealand (MNZ) the owner engaged a naval architect to design a hull modification that would reduce the registered length of the vessel to less than 45m.

"The naval architect designed a modification that consisted of a free-flowing, open-to-the-sea compartment," the report noted. "The free flooding was achieved by holes cut into the existing compartment both at the top and bottom to prevent pressurisation when the bow went into a wave."

The modification was made while the vessel was in dock in Nelson prior to it commencing operations. The owner was

then able to enter the vessel into the SSM system and man the vessel under Maritime Rules Part 31B. On April 18 the owners, in conjunction with Survey Nelson Ltd, applied for an exemption to have an SSM certificate.

“This allowed *Anatoki* to operate under SSM with a generic SSM system manual, which was to be made vessel specific and have operating routines and systems entered into it. After a stipulated period, usually about three months, the vessel and its systems were audited by MNZ and, if satisfactory, a full SSM certificate would be issued.”

The accident happened while the crew were still in the process of compiling the vessel specific parts to the manual.

Overall the report places strong emphasis on the human factors involved in the incident and, in its findings, cites poor bridge resource management (BRM) for the final outcome.

“When used effectively, BRM ensures that all the bridge team members share a common view of the intended passage, maintain situational awareness, anticipate dangerous situations, acquire all relevant information and act upon it in a timely manner, avoid an error chain being formed and avoid preoccupation with minor problems.”

This comment was in reference to an apparent “preoccupation” with adjusting the ladder to disembark the pilot from *Lodestar Forest* while the vessels were on a collision course.

The report notes that “good BRM should have overcome the steep authority gradient on the bridge of the *Lodestar Forest*, and the low authority gradient on the bridge of the *Anatoki*, both resulting from the power distance index of the respective nationalities involved.”

In respect of the bow modification issue the investigator



said the change did allow for the ship to trade in New Zealand waters under SSM, “however, this also had the effect of putting the vessel below the length that required it to be fitted with an AIS installation, thus increasing the risk of incorrect identification of the vessel and its intentions.”

In its findings the report also warns that the lack of AIS on vessels similar in size to *Anatoki* around the New Zealand coast, “increases the risk to maritime safety when crews of SOLAS compliant foreign vessels in New Zealand waters would expect these vessels to be so equipped.”

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