

MARINE OCCURRENCE REPORT

BOTTOM CONTACT

BY THE BULK CARRIER "SAUNIÈRE"
AT BAY STATE SHOAL IN THE ST. LAWRENCE RIVER
15 SEPTEMBER 1996

REPORT NUMBER M96F0025

The Transportation Safety Board of Canada (TSB) investigated this occurrence for the purpose of advancing transportation safety. It is not the function of the Board to assign fault or determine civil or criminal liability.

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Summary

While upbound in the St. Lawrence River from Sept-Îles, Quebec, to Fairport, Ohio, with a cargo of iron ore pellets, the "SAUNIÈRE" made contact with the bottom at Bay State Shoal, in U.S. waters, near Brockville, Ontario. The accident occurred at night, in clear weather, as a result of a belated alteration of course. The second officer was conning the vessel under the supervision of the first officer. The resulting damage to the hull required that the vessel be dry-docked, but the bottom contact caused no pollution.

Other Factual Information

Particulars of the Vessel

Name	"SAUNIÈRE"
Port of Registry	Québec, Quebec
Flag	Canada
Official Number	318427
Type	Self-unloading bulk carrier
Gross Tons	15,522
Length	195.93 m
Draught	Forward: 7.75 m Aft: 7.90 m
Crew	28
Built	1990, Port Glasgow, United Kingdom
Propulsion	Marine diesel engine, 6460 kw
Owners	Algoma Central Marine St. Catharines, Ontario

The bridge, accommodation and machinery space of the "SAUNIÈRE" are located aft.

On 15 September 1996, the "SAUNIÈRE" was approaching the Brockville Narrows upbound, when the first officer arrived on the bridge at 0140 to relieve the master. With the appropriate pilotage exemption, the "SAUNIÈRE" was under the conduct of her officers, and the master and the first officer were qualified to have the conduct of the vessel. After clearing the Brockville Narrows, the second officer had the con of the "SAUNIÈRE", under the supervision of the first officer, as part of the second officer's pilotage training for that section of the river. Also on the bridge were the wheelsman and a look-out. It was a clear night, and the vessel was steering a course of 216°(T&G) and making a speed over the ground of some 9³/₄ knots as she approached the alter-course position off buoy 153 at Whaleback Shoal. The first officer used the VHF radio to discuss a possible passing location with the tanker "SATURN", which was about 1½ miles ahead and being overtaken by the "SAUNIÈRE".

The next section of the ship channel required an alteration of course of some 22 degrees to port to 194° and would take the "SAUNIÈRE" past the Crossover calling-in point. Buoys 153, 157 and 159 mark the east side of the next section of the ship channel, and the practice was to start the alteration before these buoys were in line. The first officer realized that they had passed the alteration point when he saw that the buoys were starting to open up and brought this to the attention of the second officer who then gave the order to bring the vessel to a heading of 192°. The first officer, who was at the chart table on the port side of the bridge making an entry in the speed logbook, saw the Bay State Shoal light fine on the starboard bow and proceeded to the starboard side of the bridge, and urgently told the second officer to bring the vessel further "over".

The second officer's order for a heading change to 185° was quickly overridden by the first officer ordering the wheel hard over to port. However, there was no time for the evasive action to take effect. Within seconds, with the rudder indicator showing the rudder reaching the hard-a-port position, the "SAUNIÈRE" struck the bottom

¹ All times are EDT (Coordinated Universal Time (UTC) minus four hours) unless otherwise stated.

at Bay State Shoal. The time was about 0155. The master was called to the bridge and tank soundings were immediately taken. It was found that No. 1 starboard double-bottom tank was leaking, and the vessel was anchored at Third Brother Island at 0340.

At the subsequent dry-docking, the bottom shell plating was found to be indented on the starboard side in way of Nos. 1 to 3 double-bottom tanks. Associated internals were distorted and the hull was holed in three places in No. 1 tank.

Pilotage on the "SAUNIÈRE"

In the Seaway, all vessels, other than those specifically exempted and Canadian or American ships whose masters and officers have the requisite experience, are required to use a pilot of the Great Lakes Pilotage Authority (GLPA). An exemption had been obtained by the owners of the "SAUNIÈRE".

The owners had sent the first officer to Newport, Rhode Island, for a St. Lawrence River piloting course the previous year. The first officer had made some 30 trips through this section of the river. At the time of the accident, the owners had no documented policy with respect to piloting by officers and pilotage training of officers, and it was carried out at the discretion of the master. However, it was a requirement of the owners that two officers be on the bridge when the vessel was in restricted waters. After this occurrence, the owners decided to document their policy on piloting by officers and pilotage training of officers.

Alter-Course Manoeuvre

The required alteration of course was from the 216° being steered by the "SAUNIÈRE" to a charted course of 193½°. The intent was to steer 194° to allow for the current which is described in Volume 1 of the Sailing Directions for the Great Lakes as setting in a 030° direction at a rate of 0.4 knot in the vicinity of buoy 153. It was the practice to initiate the turn before the buoys were in line, reportedly about half a ship's length before that point. With a total change in heading of only 22 degrees, there was some flexibility in how the turn was effected in terms of the point at which the helm was put over and the amount of helm used. However, when it became obvious that the vessel had passed the customary alter-course position, too much time was allowed to pass before the gravity of the developing situation was appreciated and the necessary corrective measures taken. The small course alterations ordered in the interim were inappropriate and delayed the eventual application of full helm, which then proved inadequate.

Bridge Resource Management (BRM) Training

In 1993, following a series of groundings in pilotage areas of the St. Lawrence ship channel, the Board conducted *A Safety Study of The Operational Relationship Between Ship Masters/Watchkeeping Officers and Marine Pilots* (SM9501). The study concluded that occurrences were often caused by the lack of monitoring of vessel movements, and lack of teamwork on vessels in pilotage waters. Consequently, in October 1995, the Board made several recommendations, including that:

The Department of Transport require that the initial training syllabus for all ship officers be modified to include demonstration of skills in Bridge Resource Management;

(M95-09)

that:

The Department of Transport require that all ship officers demonstrate skills in Bridge Resource Management before being issued Continued Proficiency Certificates; (M95-10)

and that:

The Department of Transport, through the International Maritime Organization, actively promote the provision of formal training in Bridge Resource Management to all ship officers and marine pilots and the benefits of such training. (M95-12)

In its reply to these recommendations, Transport Canada (TC) indicated that current radar courses address issues related to BRM training. TC also intends to promote the development and the provision of BRM training courses and plans to phase in such requirement starting with higher level certificates. TC officials recently supported the concept of formal BRM training at the IMO.

Several Canadian nautical institutes are providing BRM courses as distinct training for pilots, ship masters and officers.

Analysis

The first officer's experience of the section of the river qualified him to oversee the pilotage training of the second officer. In addition to his supervisory role, the first officer undertook the other duties of the officer in charge of the watch, except for the actual conning of the vessel. For example, he had discussed passing procedures with another vessel and was making log entries. These actions should have allowed the second officer to concentrate on his primary task.

However, because the first officer was busy with these other duties, he did not give his full attention to the actions of the second officer when the vessel was approaching the alter-course position. Once he realized that the vessel had passed the course alteration point and advised the second officer to this effect, he did not monitor closely the heading change ordered by the second officer.

The first officer's direction to bring the vessel further "over" did not engender the intended response from the second officer. The second officer's order for a change of heading to 185° was not the full port helm order envisaged by the first officer. Only when the first officer realized that the Bay State Shoal light was too fine on the bow, did he intervene and attempt to correct the situation.

When communication is ambiguous, as in the use of the term "over", the message is open to misinterpretation. Although the immediate execution of the intended order may not have affected the outcome in this instance because it was given late, the ambiguous nature of such communications has the potential to negatively influence safety.

Findings

1. As part of his pilotage training, the second officer had the con of the vessel under the supervision of the first officer.

2. The second officer did not order the required change of heading at an alter-course position.
3. When the first officer noticed the vessel had overshot the alter-course position, he did not monitor closely the heading change ordered by the second officer.
4. The minor course adjustments ordered by the second officer were insufficient to compensate for the vessel having passed the alter-course position.
5. When the first officer ordered the necessary full helm, there was insufficient time to avert the contact with the bottom.
6. The owners had no documented policy on piloting by ship's officers or pilotage training of ship's officers, and these operations were carried out at the master's discretion.

Causes and Contributing Factors

The "SAUNIÈRE" struck the bottom at Bay State Shoal because the necessary corrective action was not ordered immediately when it was realized that the vessel had passed the alter-course position.

Action Taken

Following the occurrence, the company has developed the *St. Lawrence River Course Book* to serve as a guide for passage/voyage planning for its piloting officers, officers of the watch and trainees. A questionnaire was also developed to assist the master and training officer to evaluate the progress of the trainees during their apprenticeship. Also, 56 masters and officers completed BRM courses during the winter season.

This report concludes the Transportation Safety Board's investigation into this occurrence. Consequently, the Board, consisting of Chairperson Benoît Bouchard, and members Maurice Harquail, Charles Simpson and W.A. Tadros, authorized the release of this report on 23 December 1997.