MARINE OCCURRENCE REPORT
M96L0083

STRIKE

BY THE RAIL FERRY "GEORGRES ALEXANDRE LEBEL"
AT THE ENTRANCE TO THE PORT OF MATANE, QUEBEC
24 JULY 1996

Marine Occurrence Report

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Summary

On 24 July 1996 the rail ferry "GEORGES ALEXANDRE LEBEL", laden with 2 505 metric tonnes of miscellaneous cargo out of Baie-Comeau, Quebec, was heading to the Port of Matane, Quebec. In the course of approach manoeuvres in restricted visibility in the approaches to the Port of Matane the "GEORGES ALEXANDRE LEBEL" struck the head of the west pier. Once inside the harbour, the vessel docked without incident.

The propeller shaft, propeller, rudder stock and rudder on the starboard side were bent. The occurrence did not result in any injuries or pollution.

Ce rapport est également disponible en français.

Other Factual Information

Particulars of the Vessel

Name	"GEORGES ALEXANDRE LEBEL"
Port of Registry	Montréal, Quebec
Flag	Canada
Official Number	369371
Type	Rail ferry
Gross Tonnage	7 907.76 tons
Length	119.92 m
Draught	Forward: 47.5 dm
	Aft: 50.3 dm
Built	1975, North Vancouver, BC
Propulsion	Two GM 3 163 kW engines
Cargo	2 505 metric tonnes of laden railcars
Crew	11
Owner(s)	Compagnie de gestion de Matane inc.
	Matane, Quebec

On 24 July 1996, at about 2010, the "GEORGES ALEXANDRE LEBEL" departed Baie-Comeau laden with 22 railcars. The cars were stowed on the main deck, which is covered against bad weather. The vessel crossed the buoy at the mouth of the Manicouagan River at 16 knots and then steered 135°G.

At about 2145, in fog, the vessel lost visual contact with the ferry "CAMILLE MARCOUX", also making for Matane. The wind was blowing out of the east-south-east at about 20 knots with seas of 1.5 metres (m).

At about 2155, when the vessel was about four nautical miles (M) from port, the chief mate went down onto the forecastle with the boatswain and two seamen to prepare for docking. The master went up to the bridge and took the conduct of the vessel. The master followed the vessel's progress on the ARPA (automatic radar plotting aid) radar on the starboard side set to the 6 M range in stabilized relative mode. A seaman helmsman was steering using the helm control. The vessel was slightly south-west of the planned trajectory, and the master gave the order to steer 130°G. In the approaches to the harbour, the second officer went out onto the starboard wing to keep a lookout.

At about 2223, when the vessel was 1.5 M from the harbour entrance, the speed was reduced to approximately 7 knots. At 7.5 cables from the entrance, the course was altered to 150°G, and, at 5 cables, the master again reduced the vessel's speed to about 2.5 knots and

[1] All times are EDT (coordinated universal time [UTC] minus four hours) unless otherwise stated.

[2] The gyro compass error is considered to have been negligible.

ordered the helmsman to steer 190°G. At 3 cables, the green light of the pier was observed slightly to port of the vessel's centre line. The searchlight on the wheelhouse was turned on.

The master noticed that the helmsman was steering 193°G and asked him to increase the rudder angle to keep the vessel on a course of 190°G. At one cable from the entrance, the chief mate observed the red light of the west pier and informed the master of the nearness of the pier head.

The master ordered the helm hard-a-port, but the helmsman did not hear the order, and the master had to repeat it to him. The master ensured that the order was carried out by watching the steering indicator; the vessel then altered course to port. The master then ordered the helm midships, but the helmsman was not familiar with this wheel order, and the master had to put the helm midships himself. The chief mate and the second officer informed the master of the nearness of the head of the west pier. Both main engines were stopped, and, at about 2230, the starboard quarter of the "GEORGES ALEXANDRE LEBEL" struck the west pier.

At about 2300 the vessel docked without incident at its berth.

To minimize the frequency and cost of maintenance, Canadian Coast Guard Aids to Navigation Services uses solar power to operate the red light on the west pier. In good visibility (10 M), the nominal range of the lights is respectively 6.1 M (red light on the west pier) and 10.2 M (green light on the east pier). Although the difference in range between these two lights is large in good visibility, in fog (visibility 0.5 M), the effective range of the lights is only 0.93 M (red light) and 1.22 M (green light).

The current practice on board the "GEORGES ALEXANDRE LEBEL" during docking and sailing operations was to assign the second officer to the helm and have the seaman helmsman join the boatswain party down on the forecastle. On this occasion, however, to maintain an effective lookout in restricted visibility and assist the master, a permanent seaman helmsman was ordered to remain at the helm. In this occurrence, the second officer and the seaman helmsman were both replacements. However, the master ordered the seaman helmsman to remain at the helm because he knew the vessel better than the second officer.

Although he had been a crew member on board for some years, the seaman helmsman chosen to perform the docking manoeuvres had never steered the vessel during docking, and his vessel steering experience was limited to a few practice sessions during sea crossings. The second officer holds a Master Mariner's certificate and had in the past replaced the chief mate for about ten days.

The company did not have any written instructions concerning crew members' assignments and roles during docking and sailing operations.

On 31 August 1996, at the request of the Public Works and Government Services Canada Engineering Division, an underwater inspection was performed on the head of the west pier. Tetrapods were found scattered about the sea floor at the entrance to the harbour. It was determined that the tetrapod that jutted highest above the sea floor was submerged approximately 5.7 m under the chart datum. At the time of the occurrence there was a tide of approximately 3.3 m above the chart datum. Further, there were tetrapods missing on the east side of the head, but there is no indication that the rail ferry's striking the west pier head was the cause of this. However, scoring was noted on the side and the turn of the bilge, forward of the counter, at 2 m and 4 m, respectively, under the waterline on the starboard side.

Analysis

Before observing the two lights on the piers, the members of the bridge crew had to conduct the vessel by radar. The effective range of the lights was limited in fog and did not allow approach by visual observation. The range of the lights on the east and west piers complies with the beaconage service standards provided by the Canadian Coast Guard.

Planning and timing are essential components for the success of any landing or docking operation. Because the vessel was steering 193°G instead 190°G, the approach occurred towards the head of the west pier instead of towards the centre of the harbour entrance. The master ordered the rudder angle increased, but this compensation was not deemed adequate. To bring the vessel back to the planned trajectory, a course alteration to port was ordered, but the delay in performing the course alteration contributed to causing the vessel to drift more towards the west pier.

Because the main deck is covered, the side is high, and thus the ferry is subject to being driven by the wind. The navigator must take this into account. Near the entrance to the harbour, the main engines were stopped to minimize damage. The stiff breeze out of the east-south-east blowing abeam the vessel also contributed to driving the vessel toward the west pier.

In adopting the International Safety Management Code on 4 November 1993, the International Maritime Organization (IMO) urged companies to implement a safety management system at all levels of the company, both at sea and ashore. As the Code does not come into force until June 1998, the IMO can at present only promote the Code.

Safety management serves, in part, to define and establish written instructions for ensuring that the persons designated to perform tasks on board ships can discharge them.

Because of the presence of fog in the approaches, a seaman helmsman was already at the helm when the crew was dispatched to the deck for docking. Instead of asking the second officer to replace the seaman helmsman at the helm, as was current practice on board, it was decided to keep the seaman helmsman at the helm because it was felt that he knew the vessel better than the second officer.

There were no written instructions concerning crew members' assignments and roles. The decision to leave the seaman helmsman at the helm was made on the spur of the moment, on the assumption that the occasional seaman helmsman could perform the task of helmsman.

Given the height of the tide at the time of the accident, the tetrapods were submerged by at least 9 m of water at the harbour entrance while the draught of the rail ferry was only 5 m. The "GEORGES ALEXANDRE LEBEL" therefore had an under-keel clearance of about 4 m. The presence of scoring on the side indicates that the rail ferry did not strike one or more tetrapods on the bottom but rather those forming part of the head of the west pier.

Findings

1. The company had not implemented a safety management system.

2. The seaman at the helm had not received adequate training to perform docking operations.

3. The course alteration was not performed in time to avoid the head of the west pier.

4. During the approach, the wind drove the vessel towards the head of the west pier at the harbour entrance.

5. The effective range of the pier lights made it impossible to approach by visual observation.

Causes and Contributing Factors

The "GEORGES ALEXANDRE LEBEL" struck the head of the west pier because steering and main engine manoeuvres were not performed in time. The company did not have any directives respecting crew members' assignments and roles. In this occurrence, the seaman helmsman could not perform his steering duties.

Action Taken

Following this occurrence, the company issued new departure and arrival procedures taking into account the experience of manoeuvring personnel.

This report concludes the Transportation Safety Board's investigation into this occurrence. Consequently, the Board, consisting of Chairman Benoît Bouchard and members Maurice Harquail, Charles Simpson, and W.A. Tadros, authorized the release of this report on 27 November 1997.