

MARINE OCCURRENCE REPORT

INCIDENT ON BOARD

**THE ORE CARRIER "FERBEC"
IN THE APPROACHES TO THE POINTE DES ORMES PILOT STATION
ST. LAWRENCE RIVER, QUEBEC
19 JULY 1995**

REPORT NUMBER M95L0106

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

On 19 July 1995, the "FERBEC" was transiting Lac Saint-Pierre, bound for the pilot station at Pointe des Ormes, Quebec. When an oil tanker passed the vessel, the master came up to the bridge to ask why the vessel's speed had been reduced. A discussion punctuated by offensive remarks ensued between the master and the pilot. It reached a climax when the master told the pilot that the main engine could not be stopped because it was operating on heavy oil. Eventually, the scheduled pilot change took place without the main engine having to be stopped, and without the vessel coming into a close-quarters situation with the oil tanker.

Ce rapport est également disponible en français.

Other Factual Information

Particulars of the Vessel

	"FERBEC"
Official Number	371560
Port of Registry	Montreal, Quebec
Flag	Canadian
Type	Ore carrier
Gross Tonnage	33,792
Length	223.27 m
Draught	F: 5.45 m A: 7.50 m
Built	1966, Tokyo, Japan
Propulsion	Sulzer 2SA, six-cylinder engine, 15,000 kW
Owners	CSL Group Inc., Montreal, Quebec

On 19 July 1995, at about 1130, a pilot boarded the "FERBEC", which was preparing to depart the wharf at Saint-Joseph-de-Sorel, Quebec. Since the preparations for departure had not been completed, the master invited the pilot to have lunch. The vessel departed for Havre-Saint-Pierre, Quebec, at 1215.

During the crossing of Lac Saint-Pierre, the vessel had to reduce speed when passing buoy S41 to allow a deep-draught oil tanker to overtake. The master, who was in his office, went to the bridge to ask why the speed had been reduced and why the vessel had passed so close to the buoy; he had followed the vessel's progress on the secondary screen of the Electronic Chart Display and Information System (ECDIS) installed in his quarters. Upon his arrival on the bridge, the master and the pilot exchanged some offensive remarks about the reasons for reducing speed. At 1423, the engine speed was increased.

At 1432, the vessel was abeam of Port-Saint-François, Quebec. The master was concerned that the oil tanker that had passed the "FERBEC"

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

was less than 0.5 M ahead, the vessel was close to the pilot station, there was a bridge downstream, and the engine of the "FERBEC" was still set to "full ahead".

When the distance between the two vessels continued to decrease and the speed had still not been reduced, the master suggested that the pilot reduce speed since the main engine could not be stopped because it was operating on heavy oil. At 1435, the speed was reduced. An angry discussion ensued. Fifteen minutes later, the scheduled pilot change took place without the two vessels coming into a close-quarters situation and without the main engine having to be stopped.

The owners of the ore carrier had prepared two information exchange cards for masters and pilots. One is entitled "MASTER/PILOT INFORMATION EXCHANGE CARD" and the other, "MASTER/PILOT CHECK LIST" (DISCUSS WHEN PILOT BOARDS). The first is a copy intended for the pilot; the second is supposed to remain on board the vessel. These cards were not completed for the occurrence voyage. The pilot has 24 years' experience and had piloted the "FERBEC" about twenty times.

The main engine of the "FERBEC", a type 6RD90 Sulzer, is designed to start and operate on heavy oil, if there is enough steam for the preheating period. In fact, the main engine can be operated on heavy oil at all times. It can also be started on diesel fuel and then transferred to heavy oil after a departure. The choice of fuel is left up to the operators on board. The manufacturer's manual No. 30173, entitled *Service Instructions for Sulzer Diesel Engines*, discusses those options on pages 027-4 and 027-5.

The ahead speed of the main engine of the "FERBEC" can be reduced to 35 RPM in order to change pilots.

Analysis

The International Maritime Organization (IMO) Code of Nautical Procedures and Practices states, in part, that "the master and the pilot shall exchange information regarding navigation procedures, local conditions and the ship's characteristics. The master and the officer of the watch shall co-operate closely with the pilot"

The accounts of the master and the pilot differ on a number of points; however, they agree that the conversation, especially toward the end of the voyage, was unpleasant. The master reportedly began listing the vessel's characteristics orally for the pilot, but was interrupted when the pilot stated that he knew the vessel because he had piloted her on a number of occasions. However, the pilot reported that the master never listed the ship's characteristics and, had he done so, the pilot would not have interrupted. The two men were alone at that time.

The Board has published a *Safety Study of the Operational Relationship*

Between Ship Masters/Watchkeeping Officers and Marine Pilots (TSB Report No. SM9501). Part 3.0 of that report summarizes findings which could relate to this occurrence. It discusses, among other issues, the fundamental differences in points of view between ship officers and pilots regarding the need for pilotage and the degree of responsibility of pilots during their assignments on board vessels. These factors, which still prevail in the marine industry, do not promote team spirit on the bridge, and may have had an impact in this incident.

During the crossing of Lac Saint-Pierre, the exchanges between the master and the pilot deteriorated to the point that they were punctuated with offensive remarks. The climax seems to have been reached when the master told the pilot that the main engine could not be stopped. According to several experienced chief engineers, this type of engine can in fact be stopped and manoeuvred when it is operating on heavy oil, although all considered that it is preferable to reduce speed to the minimum rather than to stop the engine. Many pieces of equipment are involved in the process of reversing the direction of rotation of the main engine, and this increases the risk of malfunctions. Changing from heavy oil to diesel fuel, or vice versa, also involves manual adjustments to control the operating temperatures of the fuels.

Even though the pilot had had the con of the "FERBEC" on a number of occasions, he apparently had never realized that the engine remained on heavy oil when the pilot change took place at Pointe des Ormes. He considered this practice unsafe. What was of concern to the master was the speed of approach to the pilot station, given the traffic in the area. Because of past experiences, the master was reluctant to stop the main engine for pilot changes. He had even written a note on the bridge telegraph that the main engine should not be stopped without his permission.

In part 4.4 of the Safety Study (SM9501) report, it is indicated that less than half of the ship officers and pilots who responded to the questionnaires stated that they always worked as a team, and the accident record confirms that bridge procedures and practices frequently reflect an absence of teamwork. The report continues "Bridge Resource Management, the managing of human and technical resources in an operational marine environment, is a function comprising several elements. These include the application of effective communication, the use of briefings and debriefings, and the creation of an environment where all members of the bridge team feel free to question assumptions and actions." As a result, the Board recommended 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 require that all pilots demonstrate skills in Bridge Resource Management before the issuance and/or renewal of a pilotage licence. (M95-11)

In response, the Department of Transport indicated that TC and the pilotage authorities will promote the inclusion of a mandatory requirement for completion of a Bridge Resource Management (BRM) training course for obtaining Certificates of Competency and Continued Proficiency Endorsements (CPE) for both pilots and ship officers. (The General Pilotage Regulations will be amended to impose a requirement for pilots to acquire CPEs to maintain the validity of their original Certificates of Competency.)

Conclusions

1. During the voyage, the exchanges between the master and the pilot were punctuated with offensive remarks and contributed to a reduction in operational safety.
2. The differences of opinion between the master and the pilot on matters of pilotage contributed to the deterioration in the exchanges between them, yet good communication is essential for maintaining a safe environment, which is the basis of BRM.
3. The master's reluctance to stop the main engine for pilot changes may have been well founded, but stopping the main engine would not have jeopardized the safety of the vessel.
4. The main engine of the "FERBEC" can safely be stopped or changed to astern operation when it is operating on heavy oil, provided that it does not remain stopped too long; the period of time it can be stopped depends on the ambient temperature.
5. The pilot did not know that the engine of the "FERBEC" remained on heavy oil when pilot changes took place and he considered this practice unsafe.

Causes and Contributing Factors

The exact cause of the altercation between the master and the pilot is hard to pinpoint. However, certain factors, such as the reported exchange of information at the start of the voyage, the mistaken belief that the main engine could not be stopped when it was operating on heavy oil, and the differences of opinion between the two men led to the deterioration in their exchanges. This deterioration in communications resulted in a lack of teamwork which contributed to a reduction in operational safety.

This report concludes the Transportation Safety Board's investigation into this occurrence. Consequently, the Board, consisting of Chairperson, Benoît Bouchard, and members Maurice Harquail and W.A. Tadros, authorized the release of this report on 18 September 1996.