



The VERBIER

¹ OMS is now part of the Washington State Department of Ecology's Spill Prevention, Preparedness, and Response Program

OVERVIEW

On July 10, 1994, at about a 1900 hours, the VERBIER, a Panamanian-flagged bulk cargo vessel in poor material condition, was forced to shut-down her main diesel engine because of a mechanical failure. The vessel was outbound to Tunisia from Vancouver, British Columbia, loaded with 28,105 metric tons of sulfur in bulk. While in Vancouver, the vessel had been detained by the Canadian Coast Guard for multiple SOLAS violations.

When the Captain stopped the engine, the VERBIER was approximately 2.6 miles due south of Beechey Head, in Canadian waters of the Strait of Juan de Fuca. The VERBIER was in the outbound traffic lane when the Master stopped her engine. The vessel drifted in a southerly direction at approximately one nautical mile per hour (one knot).

When the VERBIER drifted into U.S. waters, the U.S. Coast Guard ordered the vessel to use an emergency towing vessel and anchor in Port Angeles harbor. The first assist tug reached the VERBIER in heavy fog and light winds at approximately 2315 hours, but was unable to tow the vessel to Port Angeles because it lacked sufficient horsepower to adequately control the VERBIER.

While being towed by a second, more powerful tug, the towing pendant broke and the vessel again drifted briefly in Washington waters. Subsequently, the VERBIER, assisted by two additional tugs, safely anchored in Port Angeles harbor, Washington, at 1058 hours on July 11, 1994. The vessel was detained by the U.S. Coast Guard until necessary repairs were completed.



-- Parted mooring line used as tow line. Note the new splice. --

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PROBABLE CAUSE

The Office of Marine Safety (OMS) determines that the immediate cause of the main engine casualty on the VERBIER was extensive damage to the number five cylinder as the result of a loose piston nut. The loss of the piston nut likely resulted from a failure of the ship's crew to ensure that a locking bar device was installed on the piston nut.

The poor material and operating condition of this vessel was noted by the Canadian Coast Guard, the U.S. Coast Guard and OMS. This poor condition reflects the lack of owner/ operator support and oversight as well as the lack of a planned maintenance program for this vessel. The owner's/operator's decision to operate this vessel in a poor material state without an adequate planned maintenance program contributed to this casualty.

SAFETY ISSUES

Safety issues discussed in this report are:

- The importance of a proper shipboard maintenance program;
- The necessity of owner/operator support and oversight of shipboard personnel;
- The need for adequate emergency towing policies and procedures; and
- The importance of a multi-tiered intervention structure to assure detection and correction of substandard vessel operation conditions.

VESSEL INFORMATION

General Characteristics of the VERBIER

Length:	202.3 meters	Gross Tons:	20,111
Breadth:	24.5 meters	Deadweight:	32,671
Depth:	15.1 meters	Horsepower:	11,200

The VERBIER's main engine is a Sulzer, model number 7RD76. OMS discussions with the Chief Engineer of the VERBIER revealed that cylinder and piston unit number five had 2,300 operating hours since its previous internal inspection—well within the recommended inspection interval. Sulzer recommends that each unit be opened and inspected internally every 4,000 to 6,000 hours.

POST ACCIDENT VESSEL EXAMINATION

The VERBIER was boarded by an OMS inspector while at anchor in Port Angeles, Washington, on the afternoon of July 11, 1994. The inspector found the VERBIER in poor material condition. The inspector met with the Master and Chief Engineer to discuss the main engine failure and the rescue operation. The Chief Engineer could not explain why the piston nut of unit number five came loose within 2k300 operating

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hours of its last internal inspection. The type or depth of the last internal inspection conducted by the vessel's crew is unknown.

On the afternoon of July 15, 1994, while the VERBIER was being detained by the U.S. Coast Guard for additional repairs, an OMS inspector re-boarded the vessel to conduct a standard OMS vessel monitoring inspection. At this time the inspector found that the unit five piston nut had been installed without using a locking bar device. The locking bar device is used to prevent the piston nut from loosening and coming off. The lack of this locking bar device allowed the piston nut to come loose, fall off its stem and impinge on the cylinder's diaphragm, causing significant damage.

INCIDENT DETAILS AND ANALYSIS

Policies, Procedures and Responsibilities

- Proper Shipboard Maintenance Procedures

Upon boarding the VERBIER in Vancouver, Canadian Coast Guard inspectors found the following deficiencies: davits not fully operational for both lifeboats, liferaft casings broken, firefighting stations incomplete, fixed fire extinguishing systems in need of service, piping systems patched and leaking, emergency fire pump not operational, hatch cover retaining pins bent, vent systems holed, and ladders and catwalks corroded.

After the main engine casualty, OMS and U.S. Coast Guard inspectors' observations confirmed the VERBIER's state of disrepair. These observations along with the observations of OMS regarding the missing piston nut locking plate demonstrate the lack of and need for an effective shipboard maintenance program for the VERBIER. The general condition of the vessel indicates that no planned maintenance program was in place, and that repairs, if accomplished at all, were done on an 'as necessary' basis.

- Emergency Towing Procedures

To assist with the emergency towing of the VERBIER to Port Angeles, the VERBIER's crew lowered a 10-inch nylon mooring line to the waters edge. Crew members on the VERBIER secured the mooring line to the starboard H-bit on the bow and ran the line through the bow chock to act as an attachment point for the tow line. The 1,125-horsepower EDITH LOVE JOY, the first tug to undertake towing the VERBIER, experienced difficulty in controlling the vessel due to sheering (movement of the vessel away from the direction of the tow line), and later passed the tow to the 2,250-horsepower tug JOSEPH T.

The JOSEPH T experienced similar problems in towing the VERBIER because of sheering, and, in the course of the tow, the nylon mooring line parted. This was likely caused by the sheering of the vessel and the VERBIER crew's failure to use chafing gear to protect the line from wear.

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Later, when the VERBIER began taking rudder instructions from the JOSEPH T, the sheering of the vessel decreased.

The OMS inspection revealed that the VERBIER did not have written emergency procedures to assist the crew with this towing operation. Procedures should address items such as chafing gear and procedures to counter sheering. A successful rescue of the VERBIER resulted from calm weather and seas, and the proximity of the breakdown to multiple tug availability. Less favorable conditions may have resulted in a marine casualty.

Vessel Hardware Issues

- Piston Nut Loss

The loss of a piston nut and subsequent damage to the diaphragm and piston cooling chest is a casualty common for older engines that have not been properly maintained. OMS discussions with Sulzer indicated that proper maintenance could have prevented this and other similar casualties. The failure to use the manufacturer's required piston nut locking device was the immediate cause of this engine casualty.

- Emergency Towing Gear

In the course of the emergency towing operation, the mooring line used by the VERBIER's crew, as an attachment point for the tugs' tow lines, parted at the vessel. This likely resulted from the VERBIER's sheering action under tow and the crew's failure to use chafing gear. In addition, the operator on the JOSEPH T indicated there was a delay in passing a new tow line from the tug to the VERBIER due to the inability of two of VERBIER's crew to handle the heavier towing line.

All vessels should have equipment suitable for emergency towing operations aboard. A mooring line will often prove unsuitable for use as a towing pendant. The difficulty of the crew in getting the tow line aboard shows the importance of an adequate towing rig deployable from the vessel in an emergency.

Management Issues

- Owner/Operator Support and Oversight

OMS' investigation revealed that the VERBIER did not have a preventative maintenance program and that the owners/operators rarely visited the vessel. In addition, the VERBIER did not have: a pollution prevention program, written voyage plans, detailed written oil transfer procedures, established company training policies, nor written procedures for on-board emergencies.

These observed deficiencies are the responsibility of the VERBIER's owners/operators, who must take an active part in the operation of their vessels to ensure consistent compliance with international standards.

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Intervention Structure Issues

- Importance of Multi-tiered Intervention Structure

The VERBIER arrived and anchored in Vancouver harbor, British Columbia, on June 29, 1994. Canadian Coast Guard inspectors met the vessel and began a Port State Bulk Cargo Vessel inspection. Canadian Coast Guard inspectors discovered 39 SOLAS and loadline violations. The VERBIER was detained by the Canadian Coast Guard for approximately 12 days to correct the deficiencies. Because of the poor condition of the VERBIER, the Canadian Coast Guard requested the China Classification Society to attend the vessel.

The China Classification Society surveyor arrived in Vancouver, B.C., from New York and witnessed several vessel repairs. The Canadian Coast Guard "Report of Inspection" dated June 29, 1994, required all repairs to be completed prior to departure. In addition, this report required the vessel deficiencies "to be repaired and tested to the satisfaction of class." It appears the Canadian Coast Guard relied upon the China Classification Society to verify that the deficiencies were corrected before sailing. The classification society representative allowed many of the discrepancies to be corrected while en route to Panama. The items to be corrected included major deficiencies in lifesaving, firefighting, machinery, electrical, hull, rails and guards, and sanitation. The vessel departed the Vancouver anchorage on July 10, 1994, at approximately 1100 hours.

On July 10, 1994, at approximately 1900 hours, the VERBIER experienced propulsion problems described earlier in this report. Following the propulsion casualty the vessel was towed to Port Angeles, Washington. U.S. Coast Guard inspectors from Marine Safety Office Puget Sound boarded the VERBIER in Port Angeles to determine the extent of the damage. After conducting a general walk-through inspection, U.S. Coast Guard inspectors determined the vessel was in poor material condition. The inspectors verified that some deficiencies noted by the Canadian Coast Guard remained and found additional items that required correction.

On the same day, an OMS inspector conducted an inspection and examined the vessel's SOLAS and classification society documents. OMS' inspection also found the vessel to be in poor material condition. OMS found that the vessel was last inspected by the Department of Maritime Safety, Republic of Panama, while in Incheon, Korea in June of 1994—only one month before the engine casualty. During this inspection the Panamanian Department of Maritime Safety found the vessel fit for service with no outstanding comments as to any deficiencies.

To correct the deficiencies found by the U.S. Coast Guard and OMS, and because the VERBIER is a foreign vessel, the U.S. Coast Guard requested that the vessel's main engine repairs be approved by the classification society. OMS concurred with the U.S. Coast Guard requested action. The China Classification

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Society was again asked to attend the vessel. The Master of the vessel requested the classification society surveyor to witness repairs made on the main engine.

The China Classification Society surveyor arrived on July 13, 1994. He and the Master agreed that permanent repairs to the main engine would be performed at her next port of call, Panama. The surveyor examined the temporary repairs to cylinder number five (which consisted of isolating the cylinder), listened to the main engine operate, and determined that the repairs were satisfactory. The surveyor did not examine the overall condition of the vessel nor examine the other cylinders and pistons. The surveyor completed a "Report of Survey" on July 13, 1994, stating that the vessel was "Class Maintained" and "that the vessel should sail along the coast, keeping close to the land in case some emergency occurs."

In spite of the class society inspection, the U.S. Coast Guard continued its detention of the vessel for several reasons. The U.S. Coast Guard was concerned about the obvious poor condition of the vessel, the lack of concern shown by the classification society surveyor about the additional deficiencies on the vessel, the operating qualifications required by the surveyor, and knowledge that the Canadian Coast Guard had detained the vessel for over a week. The U.S. Coast Guard contacted the flag administration (Panama) and requested a representative attend the vessel.

On July 14, 1994, U.S. Coast Guard inspectors and the Panamanian registry representative jointly inspected the vessel and developed a work list of items to be corrected before the vessel would be allowed to sail. Repairs to the vessel were made to the satisfaction of the Panamanian registry and the vessel was allowed to sail by the Coast Guard on July 16, 1994.

The conclusion of the VERBIER incident highlights the difficulty experienced by port states in correcting deficiencies aboard substandard vessels. While most classification societies are diligent, the VERBIER was cleared to sail from Canada by its classification society while in violation of significant SOLAS requirements. The poor condition of the VERBIER in July, one month after a "clean" report by Panama's inspector from the Department of Marine Safety, also calls into question the adequacy of that inspection. Finally, the VERBIER incident underscores the importance of a layered flag and port state certification program that provides multiple checks of the vessel inspection and documentation process. Cooperation is needed by all parties to verify compliance with international, national, and state standards.

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RECOMMENDATIONS

The Office of Marine Safety, as a result of its investigation of this incident, makes the following safety recommendations.

To Vessel Owners/Operators -

- Develop written policies and procedures, including both maintenance and emergency towing, for use by the ship's crew. Ensure these policies and procedures are understood, updated regularly and followed. Specifically, vessels should:
 - Have written emergency towing procedures;
 - Follow management guidelines for equipment maintenance and use; and
 - Ensure adequate emergency towing equipment is available.
- Develop a policy for regularly visiting the vessel and showing active concern for its operation.
- Ensure that the ship's crew has the resources, training and support necessary to maintain the material condition of the vessel in compliance with accepted international safety standards.

To Classification Societies -

- Frequently review company operations to ensure inspectors require correction of serious deficiencies in the material condition of vessels inspected. Adopt corrective policies if problems are identified.
- Work to improve coordination and cooperation with port and flag states so substandard vessels are identified and brought up to required safety standards.

To Government and Industry -

- Improve the availability and capability of emergency towing systems in the Strait of Juan de Fuca for responding to disabled vessels.