



SHIP SAFETY BULLETIN

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Subject: BILGE PUMPING SYSTEMS: EARLY DETECTION SAVES LIVES

Recent incidents involving small vessels and resulting in loss of life prompt the issue of this bulletin concerning the importance of bilge pumping systems and the early detection of any leakage into the hull compartments of any vessel.

Bilge pumping and water level detection systems are an important safety feature of all vessels. Operators should review and ensure that:

- bilge pumping systems are designed to adequately address the risks inherent to the vessel design and its intended operations;
- bilge pumping systems are easily accessible for maintenance;
- there is a means of early detection of water levels in all bilges and spaces below the waterline not readily observable from the helm. Bilge water level indicators should have common audible alarm and a light for each indicator;
- there are means of determining whether bilge pumping systems are functioning as intended and achieving the necessary results. Testing using water is not always practicable so it is not possible to know if a pump is achieving results;
- the vessel has a maintenance program that ensures bilge pumping systems are reliable;
- there are operating procedures that routinely test bilge pumping and bilge alarm systems;
- there are operating practices that provide crew with the necessary training and familiarity with bilge pumping and alarm systems operation.

General principles of good seamanship include having a well maintained vessel and an awareness of the status of all aspects of the vessel, including the status of navigation, machinery, and all safety systems. In the case of small vessels, where safety tolerances are more critical than those for large vessels, it is particularly important to be aware of the existence of water in the bilges and to have an efficient and effective means of removing the water. Equally important is knowing how external conditions such as weather and sea conditions impact the vessel.

Keywords:

1. Bilge Pumping
2. Detection
3. *

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Bilge pumping systems should be installed and maintained in accordance with manufacturer's instructions and applicable regulations and standards. Discharges should be arranged so that back-siphoning cannot occur in any operating condition, including trim and list. When pumps and associated indicators, valves, piping, outlets, and other system components do not function as intended, they should be repaired before undertaking any voyage.

Back-up systems should not be considered as a replacement for primary systems. Back-up systems or dual systems are only intended to take the place of the primary system when it fails to operate effectively during a voyage. Bilge pumps installed in excess of the minimum required by regulation should always be operational.

High water level detectors should be fitted in hull compartments and audible and visual alarms installed at the helm for safety reasons. Bilge pump "on/off" indicators are also recommended. If bilge pumps are required to run frequently or continuously during normal operations, there may be leakage or ingress of water. Steps should be taken to immediately address this deficiency.

Operators should also be aware that bilge water may be contaminated with oil from onboard machinery. In order to comply with the provisions of the *Oil Pollution Prevention Regulations*, they are responsible for taking measures to ensure that water being pumped overboard during routine (i.e. non-emergency) operations does not contain oil.

Owners and operators of all vessels are reminded to adopt and that the minimum requirements for bilge pumping and alarm systems can be found, among others, in the reference list that follows. Vessel owners and operators should carefully consider the risk their vessels may encounter and ensure that means to mitigate these risks have been undertaken.

References:

- *Canada Shipping Act* - Small Vessel Regulations
Marine Machinery Regulations
Small Fishing Vessel Inspection Regulations
- TP 1332 – Construction Standards for Small Vessels
- TP 10038 – Small Fishing Vessel Safety Manual
- TP 11717 – Construction and Inspection of Small Passenger Vessels

Vessel owners and operators should contact a marine professional or the nearest Marine Safety office if they require more information about bilge pumping and alarm systems.