



FINDINGS OF CONCERN

Sector Anchorage

April 23, 2020
Anchorage, AK

Findings of Concern 004 - 20

BILGE PIPING AND PUMPING SYSTEMS

Purpose: The U.S. Coast Guard issues findings of concern to disseminate information related to unsafe conditions that were identified as causal factors in a casualty and could contribute to future incidents. Findings of concern are intended to educate the public, state, or local agencies about the conditions discovered so they may address the findings with an appropriate voluntary action or highlight existing applicable company policies or state/local regulations.

The Incident: A 58-foot commercial fishing vessel was cod fishing in the coastal waters of the Bering Sea, experienced uncontrolled flooding and sank. All the crew onboard successfully abandoned ship and survived. While the vessel's captain was aware of a flooding situation, he thought it was under control by word of the vessel's engineer. A few days later the lazarette and engine room flooded leading to the vessel's sinking and loss.

Contributing Factors and Analysis: The investigation showed that the vessel's engineer failed to fully investigate, identify and repair the source of the flooding and neglected to report same to the ship's captain. To further exacerbate the problem, the vessel's bilge alarms did not properly function, the overall condition bilge system piping was questionable and the engine room bulkhead was not watertight which allowed for progressive flooding. The rate of flooding overcame the bilge pump dewatering capacity and the vessel sank. Furthermore, once the vessel's captain was aware of the flooding he also neglected to properly investigate the situation and failed return to port to make any necessary repairs.

Findings of Concern: Coast Guard investigators have identified the following voluntary actions for an owner / operator of similar vessels and operations to consider in order to reduce the likelihood of recurrence:

FishSafe.info Flyer Issue 22E / January 2007

- Test bilge pump(s) at regular intervals while underway and always prior to sailing. A bilge test should include taking suction from all spaces served by a pump.
- Test bilge alarms daily while underway.
- Know your pump capacity including static head reduction against flooding rates.
- Maintain your bilge alarms, pumps, and piping in proper working condition.
- Make all bulkhead penetrations watertight.
- Return to port if bilge system is in question or there are unresolved flooding issues.

Flooding Rate in Gallons per Minute					
Hole size (Dia.)	6" Below Waterline	1' Below Waterline	1' 6" Below Waterline	2' Below Waterline	3' Below Waterline
1/8"	.17	.30	.31	.35	.43
1/4"	.88	1.20	1.53	1.80	2.20
3/8"	1.94	2.70	3.40	3.90	4.80
1/2"	3.46	4.90	6.00	6.90	18.50
3/4"	7.77	11.00	13.50	15.60	19.10
1"	13.96	19.60	24.20	27.80	34.0
2"	55.49	78.60	96.10	111.10	136.10
4"	222.10	314.30	378.70	444.50	544.40
6"	499.60	707.20	865.30	1000.20	1225.00



UNITED STATES COAST GUARD
U.S. Department of Homeland Security

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Closing: These findings of concern are provided for informational purpose only and do not relieve any domestic or international safety, operational, or material requirements. For any questions or comments please contact Sector Anchorage Investigations Division by phone at (907) 428-4173 or by email at WesternAlaskaIO@uscg.mil.