Coast Guard Sector Houston-Galveston
Marine Safety Information Bulletin 26-08

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Loss of Vessel Propulsion, Maneuverability and Safety Systems Due to Clogged Sea Strainers

This annual MSIB is issued to provide awareness for the Gulf Menhaden seasonal event.

Throughout the Houston Ship Channel, Menhaden have been known to accumulate in sea strainers and cause loss or reduction in propulsion, reduced maneuverability, and loss of water pressure within the firefighting systems. This is typically a seasonal event primarily occurring in the months of March thru October (although vessels have reported Menhaden impacts year-round). Menhaden are typically found in coastal and inland tidal waters, and can form large surface schools, appearing in near-shore Gulf waters. Schools of fish can be drawn into the vessel's sea chest, clogging the sea strainers, reducing cooling, and causing high water/oil temperatures. In extreme cases, intake of these fish have choked entire coolant systems resulting in engine auto slowdowns or automatic shutdowns. Any system that takes suction from the sea could be at risk.

The Lone Star Harbor Safety Committee's Causality Analysis Workgroup (CAWG) developed the attached Recommended Best Practices and "*Vessel Questionnaire on Cooling Water Impacts by Menhaden Fish*". All deep draft vessels operators are encouraged to follow the Recommended Best Practices and are asked to complete and submit the questionnaire to info@theagcteam.com. The CAWG will coordinate with Texas Parks and Wildlife to identify peak periods of projected activity in the Houston Ship Channel and will make this data available to the vessel via the vessel agent. Workgroup will also be coordinating with Texas A&M University to identify environmental factors The data collected will assist the CAWG with its continued analysis of the patterns of the Menhaden and the development of additional best practices.

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Enclosure: (1) Recommended Best Practices and Menhaden
(2) Vessel Questionnaire on Cooling Water Impacts by Menhaden Fish

Menhaden Identified Best Practices

- Prior to transit, inspect and clean the service sea chest. Ensure filters and coolers are clean prior to entry into US waters. Regularly clean the sea chest, especially if vessel is expected to transit in shallow waters.
- Houston Pilots will proactively engage in discussion on this issue during Master/Pilot conference
- Recommend additional personnel standby in engine room with essential equipment ready to clean the strainers.
- Recommend that strainers be cleaned just prior to Houston Ship Channel (HSC) transit.
- Task Risk Assessments (or similar) should be carried out prior to transiting the HSC and discuss among crew immediate actions to be taken when the strainer becomes clogged.
- Be aware of the Solunar activity for your day/time of transit, since high levels of "fish activity" have correlated to clogging incidents.
- Operate on minimum cooling capacity, keep maximum buffer.
- Ensure all pressure gauges are working.
- Monitor pumps and filter differential pressures. Monitor SW pressure for signs of reduced performance. If observed, call out team for cleaning strainers.
- Continuously monitor suction and discharge pressure of main engine sea water pump in use during transit. Have low pressure alarm for sea water cooling for main engine air coolers
- No recirculation of sea water should be carried out during the transit.
- Continuously monitor and control relevant temperatures.
- Have a contingency plan in place and ensure all engine personnel are familiar with the plan.
- All engine crew to be familiar with the system and its proper procedure of change over from one sea chest to the other and the proper venting.
- Maintain good communication between bridge and Engine Control Room.
- Consider posting a double watch in the engine room while in pilotage waters. Have personnel ready for cleaning of strainers during transit.
- All tools and equipment used for opening the sea chest and cleaning the strainer should be standing by and ready for usage.
    - It is a good practice to always keep all the bolts and nuts of the sea chest filter cover well lubricated and eased up in order to avoid unnecessary delay in opening the filter. Same should be done for the coolers suction filters.
    - Have a spare LT cooler sea water inlet strainer basket to reduce the time required to get the cooling system back in use.
- Vessels regularly transiting the HSC should consider having a spare clean filter strainer standing by, allowing quick changeovers of strainers.

- Use one sea chest only and keep the other one(s) for backup/stand by. Make it a routine to check/clean sea chest and central coolers for efficient operation of the ship.
- The quantity of small fish sucked into the sea chest is dependent on the sea water cooling flow. The sea water quantity which is pumped through the sea water pumps may be reduced in order for the vacuum in the sea chest to be decreased.
- Keep freshwater generator ready for use. Fresh water evaporator must be ready but the ejector sea water pump should be at stop condition.
- Consider back-flush arrangements for filters and coolers during design or retrofit of vessel.