HOUSTON SEA CHEST CLOGGING SURVEY

***** YOUR HELP IS VOLUNTARY AND ANONYMOUS*****
*****PLEASE DO NOT INCLUDE VESSEL NAME OR NUMBER *****

IT IS 2015 MENHADEN SEASON IN THE HOUSTON SHIP CHANNEL

To Vessel Master/Chief Engineer:

The purpose of this survey is to assist the Lone Star Harbor Safety Committee (LSHSC) workgroup develop guidance on preparing vessels for port calls in the western US Gulf during Menhaden season (typically April through October) in order to reduce or avoid potential overheating issues. Therefore, we appreciate your input and cooperation - it is critical to the success of this effort.

Menhaden (also known as 'pogy') are a smallish, flat, oily fish common to the Gulf of Mexico. We are now experiencing a large population of young Menhaden fish in the Gulf of Mexico and in the Houston Ship Channel. These fish clog sea chest strainers and restrict the flow of sea water cooling. The potential danger of this is the subject of USCG Marine Safety Information Bulletin (MSIB) 11-15 (attached).

The Houston Pilot aboard your vessel will help you complete and submit this survey to the LSHSC for review. This survey should take less than 10 minutes to complete. Please return the completed survey to the Houston Pilot onboard your vessel (preferably on the outbound transit), before he or she departs your vessel.

Thank you for your assistance,

LSHSC Menhaden Workgroup

Section A - Vessel information (status at transit)			
1. Date:		2. Time:	
3. Weather:			
Air Temp. (°C / °F)	Wind Dir.	Wind speed (kts.)	Pressure (mB)
4. Type of Vessel: ☐ Tanker ☐ Chemical tanker ☐ Container ☐ Dry cargo ☐ Other			
5. Approximate Summer Deadweight (in thousands of tons): ☐ 3-10k DWT ☐ 11-20k DWT ☐ 21-48k DWT ☐ 49-80k DWT ☐ >81k			
6. Approximate LOA: ☐ <61m (<200 ft.) ☐ 61m - 152m (200 ft. - 500 ft.) ☐ 153m - 244m (501 ft. - 800 ft.) ☐ >244m (>800 ft.)			
7. Approximate Breadth: ☐ <15m (<50 ft.) ☐ 15m - 32m (50 ft. - 105 ft.) ☐ 33m - 37m (106 ft. - 120 ft.) ☐ >37m (>120 ft.)			
8. Vessel condition: ☐ Ballast ☐ Loaded			
9. Vessel Draft - Aft (if not known, then Mean Draft): meters / feet			
Section B - Engine cooling information (status at transit)			
10. Has your vessel cleaned the sea chest strainers in the last 7 days? ☐ Yes ☐ No			

11. How many sea suctions does the vessel have?

_____ Port _____ Starboard

What is the height above the keel of your sea suctions? (please indicate meters or feet)

_____ Port high _____ Starboard high

_____ Port low _____ Starboard low

Which sea suctions were originally used for this transit?

☐ Port high ☐ Starboard high

☐ Port low ☐ Starboard low

12. Are all of the sea suctions fully functional?

☐ Yes ☐ No

13. Sea chest strainers are:

☐ Single in-line ☐ Duplex

14. Are sea chests equipped with an operating back flush arrangement?

☐ Yes ☐ No

15. Number of SW Cooled Systems:

16. Are sea chests and coolers on a common system?

☐ Yes ☐ No

17. Is your vessel equipped with operating sea water pump suction alarms and pressure gauges?

☐ Yes ☐ No

18. Select one:

☐ Sea water from the sea chest will be used for other functions or equipment during the transit.

☐ Only essential equipment will be running during the transit - all non-essential equipment will be switched off or isolated.

19. Do you have a contingency plan if a sea chest gets clogged or if there is a low sea water pressure alarm?

☐ Yes ☐ No

20. If yes, please briefly describe your contingency plan:

Section C - Transit information

21. During this transit did your vessel experience any of the following:

- Overheating of the main engine or loss of propulsion
- High temperature alarms
- A voluntary speed reduction to prevent any loss of maneuverability, potentially due to sea water obstructions

☐ Yes (Please answer remaining questions #22-29)

☐ No (Please skip to questions #28-29)

22. Date of occurrence:	23. Time of occurrence:

24. Location of occurrence:

☐ Houston Turning Basin

☐ Above Morgan's Point at: _____ (be specific, such as buoy #)

☐ Below Morgan's Point at: _____ (be specific, such as buoy #)

☐ Galveston/Texas City area: _____ (be specific)

☐ Bolivar Roads and/or Bolivar Roads Anchorage

☐ Offshore Fairway and/or offshore Anchorages

25. If you had to switch sea chests, which ones did you switch to?

☐ Port high ☐ Starboard high

☐ Port low ☐ Starboard low

26. If you had to clean the strainer baskets, how long did it take to complete?

27. Please briefly describe any other actions taken:

Section D - Comments

28. Any best practices to share based on your experiences?

29. Other comments and feedback you would like to provide to the workgroup?

Community Participant,

This is an Announcement from the Houston-Galveston Port Community

Announcement:

Coast Guard Sector Houston-
Galveston Marine Safety Information
Bulletin 11-15

Loss of Vessel Propulsion and
Maneuverability Due to Clogged Sea
Strainers

Loss or reduction in propulsion continues to occur in the Houston Ship Channel (HSC) complex. One of the causes continues to be accumulation of small fish in vessel's sea strainers. This is typically a seasonal event involving small fish (primarily Gulf Menhaden), with May-October being the highest risk. Gulf Menhaden are found in coastal and inland tidal waters and form large surface schools, appearing in near-shore Gulf waters from April to November; the Menhaden also have an affinity for the Galveston Bay area due to the higher water salinity. The fish are sucked into the vessel's sea chest, become trapped in the sea strainer reducing cooling and causing high water/oil temperature alarms; in extreme cases these fish have choked entire coolant systems leaving vessels dead in the water. Several incidents have resulted in vessel's grounding, causing costly delays and property damage.

It is unknown at this time exactly where or how these fish are getting sucked into the strainers. The biggest issue encountered is when a vessel crew removes the basket filter to dump out the fish. When the filter is out of the strainer, fish then move past the point of filtration and are sucked into the pump. The fish are then chopped into small pieces by the pump, which chokes up the engine coolers resulting in high temperatures in the coolant system. The engine can then overheat and go into auto slow down, or can automatically shutdown causing a loss of propulsion. It is strongly recommended that vessel operators pay special attention to the warning signs of overheating engines due to clogged sea strainers, and take necessary actions to mitigate this serious risk prior to entering the HSC.

Potential Actions to Mitigate:

1. Well-managed procedures for cleaning seawater strainers should be used, which include back-flushing by opening the strainer outlet valve from upstream to prevent fish carryover into the pumps, and closing the valves on either side of the strainer before opening it up to clean. Utilizing nets to scoop the fish out has also been a method used in the past.
2. Implement an engineer-designed approach, such as using the aft peak tank for seawater cooling purposes. For example, internal cooling, which is commonly used for vessels which operate in extreme cold weather conditions such as the Baltic Sea and Great Lakes during the winter.
3. If and when the vessel is getting underway from anchorage, make sure all strainers are cleaned prior to getting underway.
4. Implement a preventative system that requires frequent cleaning and swapping between sea strainers whenever the vessel is operating in, and in the vicinity of the HSC.

This bulletin shall remain in effect until June 15, 2016.

BRIAN
K.PENOYER
Captain, United States Coast Guard
Sector Commander and Captain of the Port

PREVIOUS INFORMATION FROM 2014

Navigations Operation Sub-Committee
Casualty Analysis Work Group (CAWG)
August 1, 2014

Loss or reduction in propulsion continues to occur in the Houston Ship Channel (HSC) complex. One of the main causes continues to be accumulation of marine debris and small fish in ship's sea strainers. The Casualty Analysis Work Group (CAWG) has discussed the issue at length and reviewed several recent incidents. This is typically a seasonal event involving small fish (primarily Gulf Menhaden) and the volume of marine debris that increases during severe weather. Gulf Menhaden Fish are found in coastal and inland tidal waters and form large surface schools, appearing in near-shore Gulf waters from April to November. The fish and excessive marine debris become trapped in the sea strainers causing loss or reduction of propulsion due to high temperature alarms and choking of the coolant systems. It is strongly recommended that vessel operators pay special attention to the warning signs of loss of propulsion due to clogged sea strainers.

We recently had the following incident occur on July 4th with fish clogging the sea strainers. It happened on a deep draft freight, bulk carrier, ship that was inbound to Houston. They switched over to high sea suction prior to entering the HSC, however, the strainer for the high sea suction became clogged with fish quickly after transiting a short period through the HSC. They then switched to low suction and cleaned the high suction strainer by removing the filter and dumping the fish out. The low suction quickly became clogged and they immediately switched back to high suction after cleaning the strainer. The biggest issue they encountered was when they removed the filter they allowed several of the fish to enter the pipe. These fish were then chopped into small pieces by the pump, which choked the coolers causing high temperatures in the coolant system. The engine then went into auto slow down and they had to order assist tugs in order to safely transit to their dock.

Actions taken to mitigate this for future are: clean the strainers out with nets to prevent the fish from getting into the piping, and apply pressurized air into the sea suction in an attempt to prevent the fish from entering the sea suction.