SAFETY ALERT 01-10

Seventeenth Coast Guard District
United States Coast Guard
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STABILITY PRACTICES FOR ALASKAN COMMERCIAL FISHERMEN

Vessel stability continues to be a significant factor contributing to tragic commercial fishing vessel casualties in Alaskan waters. The Coast Guard is reminding fishing vessel owners, masters and crew that adequate vessel stability is a shared responsibility. The following practices will ensure safer operations:

1. ***Ensure watertight integrity on or above the maindeck.*** Watertight integrity and the material condition of the hull are vital to prevent sinking and progressive flooding. Topside watertight integrity is as critical to vessel stability:

- Close and dog all watertight doors, especially those exterior doors facing aft or leading into the house and processing spaces. Do not allow these doors to be tied open while at sea. Masters should enforce closure discipline anytime the vessel is away from the pier.
- Fish hold closures should be inspected and maintained often. Closure arrangements that are open to the weather and to water on the deck must be capable of standing up to whatever conditions the vessel will encounter.
- Lazarette openings must be kept closed, maintained as necessary, and checked often. When loading gear or cargo on deck, consider access to the lazarette.

2. ***Avoid vessel overloading.*** Increasing the load beyond the vessel's capabilities, even though keeping the center of gravity low, is hazardous. Owners and operators should know safe loading limits, and should periodically consult a naval architect to become completely knowledgeable about the limits of their vessel's capability. Masters aboard vessels with stability instructions should closely adhere to all guidance and conditions. Consider the following:

- Overloading leads to decreased freeboard, which directly impacts the reserve buoyancy available to enable the vessel to survive the conditions it operates within. Indeed, leaving topside doors open reduces reserve buoyancy as well.
- Overloading leads to increased water on deck, and makes downflooding points more vulnerable. Downflooding points are those openings in the watertight envelop that will allow uncontrolled flooding into the vessel as she is rolled on her side.
- Overloading decreases the angle of heel needed to put the deck edge to the water. This angle generally corresponds to the heel angle at which the vessel's righting energy is greatest. This means that the lower the vessel rides in the water, the smaller the range of positive righting energy. Once heeled to the angle where the deck edge is immersed, the vessel will have less and less energy to right itself back upright.

3. ***Maintain and test bilge highwater alarms.*** Bilge alarms serve as the first warning of trouble, and are especially critical in unmanned spaces, such as the lazarette.

- Install alarms that will be located where they are easy and convenient to test, and that will not alarm at a level that is too low (and therefore become just a nuisance).
- Test bilge alarms at least weekly. Repair or replace them as soon as they fail.

4. ***Minimize the adverse effects of free surface.*** Free surface refers to the condition when the surface of a liquid or liquid-like load is free to move… think of it as the side-to-side energy of the sloshing. A free surface has the effect of raising the vessel's center of gravity, an impact which is almost always undesirable.

- Water on the deck imparts a free surface effect. Scuppers and other openings in bulwarks must be of sufficient area to allow rapid draining.
- Always secure cargo, especially to prevent any movement athwartships. This includes ice and fish in the hold… ensure that bin systems are sound.
- Minimize the number of tanks that are not either completely full or drained empty. If the vessel has instructions from a naval architect for the order of fuel tank consumption, follows those orders.
- Always investigate the cause of any vessel list, before moving any loads or weights to compensate. More often than not, moving weights without fully understanding the underlying causes of the list will make the situation worse.

The U. S. Coast Guard 17th District is charged to improve the safety of all mariners in Alaskan waters. For more information, contact Ken Lawrenson at 907 463-2810, or kenneth.lawrenson@uscg.mil, click here, or visit www.fishsafe.info and follow the link to Homeport, and then References.