



Marine Safety Information Bulletin

Commandant (CG-5PC)
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Improving Fishing Vessel Stability

It has been three years since the release of USCG Marine Safety Alert (MSA) 11-17. Since then, additional commercial crab fishing vessels have sunk, resulting in losses of life due to stability related conditions. In addition to the information communicated in MSA 11-17, this bulletin is intended to be informational to assist mariners in identifying ways to improve their stability awareness. Please note that it is the vessel master's responsibility to maintain satisfactory stability at all times.

Stability is the tendency of a vessel to rotate one way or the other when forcibly inclined. Operators can significantly reduce the risk of capsizing by performing the following actions:

- 1) Review the vessel's Stability Instructions (SI) periodically to ensure it accurately reflects the vessel's design and actual conditions (pot weights, fuel loads, icing conditions, as may be applicable).
- 2) Be aware of the assumptions or conditions outlined in the vessel's SI.
- 3) At the end of any vessel modifications, ensure all alterations made to the vessel are accurately accounted for in the ship's SI. (Special attention should be given to modifications that include changes to fuel tanks, freeing ports areas or areas of the hull near or below the waterline).
- 4) While at sea, be cognizant of watertight integrity.
- 5) During icy conditions, be proactive in removing ice build-up.
- 6) Do not make the mistake of overestimating a vessel's ability to handle heavy loads and heavy seas!

Periodically review the vessel's SI:

- Identify load conditions outlined in the SI.
- Identify the assumed weight of gear loaded on deck.
- Weigh the actual gear used and resolve any differences within the SI.
- Understand how the gear is arranged in the SI, especially for pots. Confirm the height of the stacked gear and its orientation.
- Understand the geographic restrictions and types of waters reflected in the SI.

Be aware of the assumptions and conditions outlined in the SI:

- Identify the max environmental conditions used in the calculations such as wind on the vessel's sail area. Confirm that the sail area includes pots, deck loads, rigging, running gear, tarps, icing, etc.
- Be conservative when considering the environmental effects on gear. Wet lines can add as much as 15-pounds per shot. (Example: 100 pots with 2 shots per pot could add 1.5-tons of water weight).
- If the vessel carries pots, identify the weight used for each pot. Weigh a representative sample of each different type of pot including lines and buoys. Rectify any differences in the SI or consult a naval architect to assist.

Review/Evaluate changes to the SI following any maintenance period:

- Pay attention to changes or blockages to freeing ports. If a freeing port location has changed, ensure a naval architect has evaluated the new conditions for compliance with 46 Code of Federal Regulations (CFR) 28.555.

- Verify changes to a vessel's rigging, deck, fishing equipment, principal dimensions, cargo holds, tank capacities, or machinery. Any major conversion or substantial alteration needs to be addressed in the vessel's SI. When in doubt consult 46 CFR 28.501.
- Follow SI guidelines with respect to watertight doors and hatches. Monitor the condition of these boundaries periodically when underway, as is safe to do so. The safest practice is to ensure all watertight and weathertight closures are secured while at sea unless in immediate use.
- Set the operational expectation to ensure your crew practices good watertight integrity procedures by putting it in your safety procedures.
- Test bilge alarms periodically. Monitor spaces underway for water intrusion where alarms are not installed.

Ice:

- Vessel operations: Be aware of horizontal/vertical icing condition parameters as outlined in 46 CFR 28.550.
- Know the icing standard used in the vessel's SI.
- Identify if pots are included in the SI icing condition calculations. Be aware that icing calculations may be based on an assumption that ice only accumulates on the pot's external surfaces, which would not account for aggregation of ice on the pot's internal netting and gear.
- Be proactive with removing build-up of ice. When removing ice build-up, break ice from the top down. Removing lower ice first may have detrimental effects on the vessel's overall stability by raising the center of mass of the remaining ice.
- Use available meteorological resources to anticipate potential freezing spray forecasts. One possible source is https://ocean.weather.gov/icing_rates/compare.php?area=ak&fhour=012.

Important vessel stability training on-line resources:

- Vessel Stability Guidance:
 - FishSafe Stability Resources: <http://www.dco.uscg.mil/fishsafe>
 - Stability Reference Guide: [https://www.dco.uscg.mil/Portals/9/DCO%20Documents/5p/CG-5PC/CG-CVC/CVC3/references/Stability Reference Guide.pdf](https://www.dco.uscg.mil/Portals/9/DCO%20Documents/5p/CG-5PC/CG-CVC/CVC3/references/Stability%20Reference%20Guide.pdf)
 - USCG MSA 11-17 (Stability): <https://www.dco.uscg.mil/Portals/9/DCO%20Documents/5p/CG-5PC/INV/Alerts/1117.pdf>
 - Stability Training: <http://www.fishsafewest.info/Training.asp>
- Centers for Disease Control and Prevention (CDC):
 - <http://www.cdc.gov/niosh/topics/fishing/default.html>
- Food and Agriculture Organization (FAO) :
 - <http://www.fao.org/fishery/safety-for-fishermen/50787/en/>
 - <http://www.fao.org/3/a-i0625e.pdf>

Questions or comments may be sent to HQS-PF-fldr-CGINV@uscg.mil or to CGCVC3@uscg.mil.