UNITED STATES COAST GUARD

U.S. Department of Homeland Security

MARINE SAFETY ALERT

Inspections and Compliance Directorate

January 9, 2014
Washington, DC

Alert 01-14

Offshore Sailing

You must be prepared.

In a recent offshore regatta, numerous sailboats experienced steering system and other failures which required assistance and/or rescue by the U. S. Coast Guard when a weather system stalled offshore creating higher than expected sea states and winds. The Coast Guard responded using an array of assets to render assistance.

Offshore sailing requires special knowledge, skills, and abilities. Vessel equipment and components must be thoroughly checked before getting underway and periodically while at sea. The offshore domain's remoteness adds a negative dynamic to survivability concerns. Preparation is key to minimizing misfortune.

The Coast Guard **strongly recommends** that owner / operators of offshore sailboats ensure proper maintenance and repair of their critical mechanical systems to reduce the possibility of failure during stressed operating conditions.

- ✓ Operational limitations of the systems must be understood.
- ✓ Sailors should have the repair manuals associated with their important propulsion and steering systems onboard and be able to detect oncoming failures and perform emergency repairs.
- ✓ Adequate tools, hardware, and an array of fasteners should be kept onboard.
- ✓ Common spare parts that are known to fail on a particular system should be kept onboard.
- ✓ If mechanical ability is lacking, additional training should be taken to provide minimum skill sets.
- ✓ Regular inspection and prompt corrective action of all steering gear components including linkages, ram assemblies, controls and cables, in addition to engine systems, should be part of getting underway and day-to-day operations.
- ✓ Equipment should be tested before getting underway, noting variations in movement, feel, sound, and resistance.
- ✓ Flooding and damage control kits should be kept onboard.
- ✓ Sailors should contemplate and envision ways to fabricate a temporary emergency rudder using components (table tops, cabinet doors, spinnaker poles, etc.) already onboard.
- ✓ Make sure all EPIRBs, PLBs, are registered, operational and available. Ensure your VHF radio is fully functional.
- ✓ Lastly, **always file a float plan** with family or friends ashore *before* getting underway. Float plans are simple tools that help rescuers locate stranded boaters in distress, and may be printed from the following site: http://www.floatplancentral.org/download/USCGFloatPlan.pdf

This alert is for informational purposes only and does not relieve any domestic or international safety, operational, or material requirement. Developed by the Fifth Coast Guard District, Portsmouth, VA. Questions may be addressed to LCDR Ken Morton, (757) 398-6284, or may be forwarded to D05-DG-Prevention-DPI-PFB-Staff@uscg.mil. *******

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TANK SAMPLING DANGERS / H_2S Threshold Limit Change

This Safety Alert serves as a reminder to Coast Guard (CG) personnel and the maritime community of potential dangers during sampling of cargo tanks. During a recent Port State Control (PSC) tank vessel examination, a CG member was exposed to a dangerous concentration of Hydrogen Sulfide (H_2S) gas and suffered a serious injury.

The exposure occurred during a tank vessel exam onboard a tank vessel carrying Grade E Sour Crude. A PSC team requested a ship's crew member check cargo tank oxygen levels using the ship's portable gas meter. The crew member accessed the cargo tank via a deck sounding valve similar to the adjacent photo. When the valve was opened the pressurized cargo tank atmosphere escaped releasing inert gas and H_2S vapors.

During the evolution the personal gas meters of two individuals involved (one CG and one crew) alarmed for H_2S. The CG officer whose alarm sounded was standing 1–2 feet downwind from the sounding valve. Within days the CG officer developed severe exposure symptoms consistent with H_2S exposure. The other two CG officers involved were standing upwind. Afterward, one reported experiencing a minor headache.

OSHA notes that H_2S is a colorless, flammable gas with a "rotten egg" smell that occurs naturally in crude petroleum. Even at low concentrations this heavier-than-air gas can irritate the eyes, nose, throat and respiratory system with effects delayed for hours or days. At higher concentrations, nausea, vomiting, headaches, dizziness, unconsciousness or death may occur. While the initial "rotten egg" odor is present, an individual may lose the ability to smell that gas after becoming exposed. Personal monitoring equipment is, therefore, vital to protect against exposure. An alarm on H_2S constitutes an acute exposure and should trigger immediate evacuation and initiation of acute exposure procedures including medical attention.

Prior to using portable gas monitoring equipment, personnel should familiarize themselves with ISGOTT Section 11.8 and safe work practices for conducting or witnessing these tests. ISGOTT recommends when sampling tanks personnel should stand perpendicular to the wind to avoid being downwind or upwind and creating eddies. When monitoring cargo tank atmospheres, all personnel should exercise diligence and great care. In all cases, personnel should completely assess the risks, to include the cargo type, tank pressure, venting arrangements, wind direction/speed and condition of the testing equipment. When H_2S is suspected to be present, ISGOTT Section 2.3.6.5 recommends that a self contained breathing apparatus (SCBA) be worn if it is necessary to breach the integrity of the cargo system and if a vapor free atmosphere cannot be guaranteed.

The American Conference of Governmental Industrial Hygienists recently reduced the H_2S dangerous Threshold Limit Value from 2 parts per million (ppm) to 1 ppm.

As a result the Coast Guard **strongly recommends** that those involved in cargo tank sampling or atmosphere testing:

- Be familiar with and adhere to ISGOTT safe work practices.
- Assess personnel risks.
- Don appropriate personal protection equipment including gas monitoring detectors, respirator or SCBA.
- If gas monitoring detectors are used ensure:
  - detectors are maintained and properly calibrated
  - alarm settings values are properly set
- Be aware and familiar with the hazards of the cargos involved as well as exposure indicators and emergency response procedures.

This safety alert is provided for informational purpose only and does not relieve any domestic or international safety, operational or material requirement. Developed by the Office of Traveling Inspectors, Washington, D.C. For additional information contact Commander Thomas Griffitts: Thomas.A.Griffitts@uscg.mil.