

## Commercial Fishing Industry Vessels Best Safety Practices Guide

Version 1.1



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### **Application and Background**

**Application:** This document should be used as appropriate by the commercial fishing industry for voluntary best practice considerations when such practices are not otherwise addressed by statute or regulation. All previous versions are superseded by this version.

The voluntary safety measures and practices contained in this document are focused primarily on vessels 50 feet or greater in length, operating beyond three nautical miles from shore, and that are more than 25 years of age. However, it should be emphasized that these safety initiatives and good marine practices should be considered for ALL commercial fishing vessels where reasonable and practicable. Implementing the best practice measures of this document will substantially improve vessel safety and reduce the likelihood of a marine casualty.

# Coast Guard personnel and Third-Party Organizations (TPO's) performing Fishing Vessel Dockside Safety Exams should promote and discuss these voluntary best practice measures during dockside safety exam discussions.

**Background:** Coast Guard Office of Investigations and Casualty Analysis (CG-INV) marine casualty data highlights that the commercial fishing industry is a high-risk profession with numerous vessel sinkings, mariner fatalities, and adverse impacts to the environment each year.

Since 2010, the Coast Guard has engaged with the Commercial Fishing Safety Advisory Committee (CFSAC) to develop many of these voluntary safety initiatives and good marine practices. The voluntary best practices in this document were compiled after identifying common hazards that all fishing vessels could face. The hazards were identified through an analysis of commercial fishing vessel fatalities and vessel disasters.

An analysis of fishing vessel disasters and crewmember fatalities conducted by the National Institute for Occupational Safety and Health (NIOSH) identified common hazards across all fleets in the U.S. fishing industry. Major hazards were identified, including fatal falls overboard and vessel disasters caused by flooding, instability, and fires. Vessel and operational hazards were also discussed with the fishing industry to identify and confirm risks to the safety of the vessels and crews. These analyses were used by the Coast Guard to identify those hazards that may be mitigated through certain safety interventions and initiatives, and by following good marine practices listed in this document.

Several fishing industry stakeholders provided initial feedback and comment in the original "Voluntary Safety Initiatives and Good Marine Practices for Commercial Fishing Industry Vessels", which was published in January 2017. The National Commercial Fishing Safety Advisory Committee (NCFSAC) and other fishing industry representatives have continued the partnership with the Coast Guard to keep the voluntary best practice guide current. In its first revision since 2017, the Voluntary

Safety Initiatives and Good Marine Practices for Commercial Fishing Industry Vessels was renamed to the "Commercial Fishing Industry Best Practice Guide" (version 1.1).

#### A. Definitions:

1. Skiff: Skiff means a fishing vessel up to 32 feet in length of open construction, arranged with little or no accommodation or interior spaces. This definition excludes Auxiliary craft.

Note: Skiff is not defined in United States Code (USC) or Code of Federal Regulations (CFR).

#### B. Certificates, Documents and Records

- It is recommended that each vessel operating as a Commercial Fishing Industry Vessel (CFIV) have/maintain a fishing vessel dockside safety exam at least once in 5 years. A satisfactory fishing vessel dockside safety examination is evidenced by a valid Commercial Fishing Vessel Safety (CFVS) Decal. CFVS Decals expire after two years.
- 2. Certain CFIVs are required by NOAA to show compliance with a dockside safety exam and current decal displayed if subject to carriage of a NOAA Fisheries Observer (50 CFR 600.746(d)).
- 3. It is recommended that a record of safety and survival equipment maintenance and inspections be completed and retained on board the vessel for three years.
- 4. It is recommended that a record of instruction, emergency drills, and safety orientation be kept on board the vessel and retained for three years. The record should include:
  - a. Name of qualified Drill Conductor (should be a member of the crew).
  - b. Type and date of training/orientation/drill; and
  - c. Names of participants.

#### C. Lifesaving Equipment

- 1. Store life jackets in locations that are readily accessible to all crewmember and, if possible, in a manner that allows them to float free in the event of capsizing.
- 2. It is recommended that each vessel with more than one individual on board have an effective means of recovering a person from the water. Examples may include Commercial Life sling, Jason's Cradle, or other devices that provide a mechanical advantage to recovering a person from the water.

- 3. In the case of a single-operator vessel, additional or alternative lifesaving devices should be in place. These may include an engine kill device, a reboarding ladder, and/or a Personal Locator Beacon (PLB).
- 4. It is recommended that personnel on fishing vessels up to 32 feet in length, of open construction, arranged with little or no accommodation or interior spaces, and excluding auxiliary craft, when operating in cold water, wear a garment or device designed to provide safe flotation.
- 5. It is recommended that individuals on board fishing vessels defined as skiffs (see definitions Section) when operating in cold water, wear a garment or device designed to provide flotation.
- 6. Ensure automatically deployable liferafts are attached to a strong, permanent, original structure with no overhead or nearby obstructions that could impede their float-free deployment.

#### D. Communications Equipment

- 1. PLBs can enhance mariner recovery should a crewmember fall overboard. Recommend wearing a PLB, Man Overboard (MOB) Device, or Satellite Emergency Notification Device (SEND) while on open or exposed decks.
- 2. Upon expiration of a non-GPS-enabled EPIRB battery or when servicing is required, a vessel with an existing EPIRB should replace it with a GPS-enabled EPIRB.
- 3. It is recommended that each vessel equipped with a Digital Selective Calling (DSC) radio have it programmed for Marine Mobile Service Identity (MMSI).
- 4. It is recommended that each vessel equipped with a DSC radio and Global Positioning Satellite (GPS) capability have the GPS feed connected to the radio, unless the radio has an internal GPS that is functional.
- 5. It is recommended that a Mayday placard or written emergency communication procedures be posted in a visible location in the vicinity of the primary radio in the pilot house or at the primary operating station.

#### E. Deck Safety Equipment

- 1. If not already required by regulation, it is recommended that the weather deck on a vessel be equipped with or have a device or material that will help prevent personnel slips. The device/material should be maintained in good condition.
- 2. It is recommended that every person on board the vessel, when on an open

deck (especially at night, when alone, when gear is being set/hauled, in bad weather, crossing hazardous bars, or when other hazards exist), wear an activity appropriate flotation device of sufficient buoyancy to keep the wearer afloat. The device may be in addition to, but not replacing the Personal Flotation Devices (PFDs) required by 46 CFR Part 28. (Use of a non-USCG-approved PFD is not a violation as long as the required PFDs are also onboard).

- 3. It is recommended that in the case of a single-operator vessel, the PLB listed in Lifesaving Equipment (Section C) be affixed to the individual's selected working flotation device.
- 4. It is recommended that if not already required under 46 CFR Part 28.215, vessels consider installing guards for exposed hazards or have another equivalent means to prevent personnel entanglement. It is recommended that an evaluation of such hazards with any powered equipment be conducted to see if guarding, an emergency stop device, or other local control device could be installed to prevent or minimize injury, but not restrict necessary access.
- 5. It is recommended that each individual onboard the vessel, when working in the vicinity of operating overhead equipment, gear, or machinery, wear a hardhat or other appropriate cranial protection.

#### F. Fire Safety Equipment and Practices

- 1. It is recommended that the following potential fire prevention or source hazards be inspected prior to the operation of the vessel and at least once a week thereafter:
  - a. Hot surface lagging/insulation is not saturated with oil or fuel.
  - b. Potential ignition sources such as loose electrical connections, or exposed hot surfaces or conductors are corrected.
  - c. Plastic wire ties should not be used, if exposed to hot surfaces that could ignite or melt the plastic tie.
  - d. Flammables and combustibles are safely segregated from possible ignition sources and placed in appropriate storage containers.
  - e. Any fuel, oil, or hydraulic leaks observed are repaired.
  - f. Bilge is free of excessive fuel, oil and volatile fumes.
  - g. Stoves and electrical heaters are guarded, and their vicinity is clear and free of combustibles and flammables.
  - h. Hazardous and flammable material storage areas/containers have separate ventilation and an appropriate fire extinguisher in the immediate area; and
  - i. Fuel vent flame screens of at least 30 x 30 mesh are installed, if possible, and are in good condition.
  - j. Where installed, engine room vent closures are functional.

#### G. Machinery and Electrical Safety

- 1. It is recommended that exhaust systems be free of leaks within any internal spaces.
- 2. Electrical systems and wiring should be maintained to ensure:
  - a. Conductor should not be exposed, unless so designed.
  - b. Electrical panels are covered, and connections not left exposed.
  - c. Batteries are secured from movement and covered or guarded.
  - d. In compliance with ABYC standards 6AWG is the maximum AWG to connect to batteries via conductors or wires if wing nuts are used.
  - e. New wiring installations or repairs are in accordance with 33 CFR 183 or another standard established for marine use.
  - f. Extension cords are limited to temporary applications; and
  - g. All permanently installed electrical equipment is hard-wired to the power source with over-current protection, where possible.

#### H. Material Condition

- It is recommended that existing weathertight/watertight closures be maintained, and function as designed. All dogs/closing devices should be maintained operable. It is recommended that gaskets be maintained in place and not painted or deteriorated. It is recommended that knife edges of closures provide a proper seal and be periodically tested.
- 2. It is recommended that any penetration of a watertight bulkhead or deck be installed in such a manner to maintain the watertight integrity of the bulkhead or deck. It is recommended that a watertight bulkhead or deck or closure that has been altered since installed be restored to a condition that ensures its watertight integrity.
- 3. It is recommended that through-hull fittings be installed with a shut-off valve located as close to the hull penetration as practicable and be constructed of a material compatible with the hull material and suitable for marine use.
- 4. It is recommended that an internal survey be conducted twice in a five-year period (or as required by the insurance underwriter), not to exceed three years between surveys. Vessels operating on the Great Lakes can conduct their internal survey on the same schedule as their out of water survey. It is recommended that the internal survey be conducted by a qualified marine surveyor. Survey details should be documented for the like of the vessel.
- 5. It is recommended that the internal survey include verifying the structural integrity/condition of the:

- a. Frames and stiffeners.
- b. Floors and decks.
- c. Shelves, brackets, clamps.
- d. Bulkheads.
- e. Ventilation.
- f. Hull openings and closures.
- g. Deadlight covers in place below weather deck.
- h. Deck openings and closures.
- i. Sills, combings.
- j. Piping; and
- k. Scuppers/freeing ports.
- 6. It is recommended that deficiencies found during the internal survey be corrected to the satisfaction of the attending marine surveyor or vessel owner within a stipulated time frame.
- 7. It is recommended that an out-of-water survey be conducted by a qualified marine surveyor from an organization accepted by the Coast Guard or by the vessel owner. Survey details should be documented for the life of the vessel.
- 8. It is recommended that wood boat out-of-water surveys be surveyed twice in any five-year period not to exceed three years between surveys.
- 9. It is recommended that all other vessel type out-of-water surveys be surveyed at least once every five years.
- 10. It is recommended that the following out-of-water survey items be examined to verify their structural integrity and service condition:
  - a. Propeller.
  - b. Shafts/seals.
  - c. Sea valves.
  - d. Rudders.
  - e. Side shell/planking; and
  - f. Tanks, voids, cofferdams, and chain locker.
  - g. External appendages (keel coolers, sea chest coverings, etc.)
  - h. Deficiencies found during the out of water survey should be corrected to the satisfaction of the attending marine surveyor or vessel owner within a stipulated time frame.

#### I. Flooding Prevention

- 1. It is recommended that each vessel maintain a damage control kit onboard, as appropriate for the vessel, to include, but not limited to, the following:
  - a. Conical soft plugs sized as per the vessel's seacocks.
  - b. Soft wood lumber and wedges.
  - c. Grease tape (fashioned from burlap or landscaping membrane and covered in industrial grade grease);

- d. Manila twine.
- e. Sheet rubber or neoprene gasket material.
- f. Hand tools (hatchet, hammer, screwdriver, c-clamps, hand saw, hack saw, disposable flashlights, battery-powered head-mounted light);
- g. Hose clamps and wire ties; Water impervious patching material and/or underwater epoxy.
- h. Oakum and rags; and
- i. Duct tape.
- 2. It is recommended each machinery or cargo space (to include fish holds and the lazarette of a vessel) regardless of the completeness of internal water-tight integrity, be equipped for dewatering the lower portions of the space. This may be accomplished via a bilge suction in that compartment from a bilge manifold connected to a dedicated pump or its own installed dewatering pump.
- 3. It is recommended that in addition to any required dewatering pump, each vessel also maintain onboard a portable dewatering pump which meets the requirements of 46 CFR 28.255, if space allows and fuel for the pump can be safely stored on the vessel. It is recommended that the pump have an independent power source.
- 4. In the case of a vessel which carries a portable pump, described in Section 3 above, dewatering of cargo or void space may be accomplished by connecting the independent pump to an above-deck fitting permanently installed and maintained through its accessibility during vessel operations.
- 5. It is recommended that each vessel have written instructions and policy regarding watertight/ weathertight closures to include:
  - a. At-sea policy for maintaining and verifying weathertight/watertight integrity and the status of such closures; and
  - b. Preventive maintenance schedule for each watertight/weathertight closure.
- 6. It is recommended that prior to operating the vessel on a voyage, the individual in charge of each vessel complete a pre-departure check to include, but not limited to the following:
  - a. Evaluation of weather and bar conditions.
  - b. Gear, catch, and hatches are secured; Any loose items on deck are properly secured.
  - c. Vessel is not overloaded.
  - d. Scuppers and freeing ports are clear.
  - e. Visible portions of shafts and rudder posts show no or little leakage; and
  - f. Vessel tanks and holds are filled in such a manner to limit free surface effect.
  - g. Any discrepancy found during the check should be corrected prior to the vessel getting underway.
  - h. The individual in charge should ensure the seaworthiness of the vessel.

i. Results of the pre-departure check should be recorded.

#### J. Periodic Testing of Equipment and Systems

- 1. It is recommended that the following equipment and systems, where required or installed, be tested prior to operation of the vessel and at least once each week thereafter.
  - a. Emergency generator(s) and lighting.
  - b. High water alarms.
  - c. Bilge pump(s).
  - d. Dewatering system(s).
  - e. Deck water/fire pump(s).
  - f. Smoke/heat/gas detectors
- 2. A record of equipment and systems testing should be kept on board the vessel and retained for three years. (NPRM 46 CFR 28.200.)

#### K. Refrigerant Safety

- 1. It is recommended that refrigerant detectors be installed in spaces containing the main receiver and compressors (e.g. freon, ammonia, or other as needed) or a portable detector can be substituted.
- 2. It is recommended that pressure relief valves be vented to the outside. It is recommended that the refrigeration system be exhausted to the outside, but not such that it would breach watertight or weather tight integrity.
- 3. It is recommended that the refrigeration system be isolated from normally manned spaces where practicable. The space housing the refrigeration system should be adequately ventilated.
- 4. It is recommended that refrigerants not be exposed to sparks, flames, or hot surfaces.
- 5. Always read the product Label and Material Safety Data Sheet (MSDS) before usage.
- 6. It is recommended that before entering a space suspected of containing leaking refrigerant or the possibility of leaking refrigerant the crew properly suit up, test the area then properly ventilate the suspected or positive refrigerant leaking space.

#### L. Stability Standards

- On a vessel that has a stability document (to include loading conditions and stability instructions), it is recommended that the owner/operator ensure that stability instructions are reviewed by a naval architect, marine engineer, or other qualified individual at least every 5 years, or after the vessel has been modified or altered that changed its stability or handling characteristics. It is recommended that the stability document be updated if determined to be necessary by the naval architect, marine engineer, or other qualified individual. A written copy of the document must be available onboard the vessel.
- 2. On a vessel that does not have stability documentation, it is recommended that the owner/operator be able to show one of the following:
  - a. The vessel's operation and history of service does not cause the stability of the vessel to be questioned by the Coast Guard or a third party who performs a condition survey of the vessel; or if this history of service is not available, then:
    - i. The vessel performs satisfactorily on an operational test that demonstrates it has acceptable stability and handling characteristics; or,
    - ii. The vessel has a satisfactory stability assessment considering its form, arrangement, construction, number of decks, route, and any operating restrictions of the vessel.
- 3. It is recommended that the operator of the vessel possess basic training on stability, and on the current loading conditions and stability instructions for the vessel.
- 4. It is recommended that the operator develop a vessel safety plan incorporating stability that considers full crew access to non-secure locations of a vessel, factoring the safety of the vessel and its crew during normal operations. It is incumbent of the owner/operator to consider the unique configurations of their vessel in the vessel safety plan for stacking of gear for loading conditions that consider weather conditions including but not limited to icing.

#### M. Vessel Safety Plan

- 1. It is recommended that the vessel owner/operator incorporate a safety policy that addresses:
  - a. Falls overboard prevention.
  - b. Recovery methods, and;
  - c. Activity appropriate wearing of personal floatation devices.

#### N. Combating Fatigue

1. Vessel owners and operators are highly encouraged to incorporate fatigue awareness and management in their training programs, understand how fatigue impacts safety and performance, and incorporate measures to manage and mitigate fatigue and sleep deprivation, particularly during periods of high workloads. Fatigue is known to play a contributing role in casualties where other types of human factors are present (e.g., situational awareness, operator decision making). Recommend fishing vessel operators adopt the best practices of Navigation and Vessel Inspection Circular (NVIC) 2-08 (Crew Endurance Management System (CEMS)) which provides a system of proven practices for managing endurance risk factors that affect operational safety and crewmember efficiency in the maritime industry.

NVIC 2-08 can be accessed at:

https://www.dco.uscg.mil/Portals/9/DCO%20Documents/5p/5ps/NVIC/2008/NVI C\_2-08.pdf

- 2. It is recommended that the individual in charge of the vessel ensure watchstanders are afforded rest periods and are adequately rested before standing their watch, particularly if the vessel is operating more than 12 hours per day where a watch system becomes more prudent.
- 3. It is recommended that a watch alarm be installed in the pilot house and should be used to combat fatigue. Watch alarms should be set on no more than 15minute intervals (but selected, depending on operational environment and should not be a distraction (either audio and or visual) from a safe navigation watch. Watch alarms should be suitably set to alert individuals responsible for the current operations of the vessel.

#### O. Watch Standing

- 1. It is recommended that the individual in charge of the vessel have a watch standing policy for their vessel and any crew member standing a navigational watch should be informed and understand the responsibilities stated in the policy.
- 2. It is recommended that watch standing policy incorporate measures that ensure individuals in charge and navigational watch standers have the necessary knowledge and decision-making capabilities to adequately stand a navigational watch to ensure the safety of a vessel.
- 3. Suggested watch standing policy items may contain items such as:
  - a. Be familiar with the use and operation of the vessel's engine and gear controls.

- b. Be familiar with the use and operation of the vessel's Electronic Navigation Systems (ENS).
- c. Be familiar with the use and operation of the vessel's Radio Detection And Ranging (RADAR), Depth Sounder, Autopilot, and AIS (Automatic Identification System). Further the Chief Mate will understand the use and operation of ARPA (Automatic Radar Plotting Aid) and the use and operation of AIS both with Radar and ENS and know how to determine CPA (Closest Point of Approach).
- d. Be familiar with the Navigational Rules of the Road handbook and understand how they apply to watch standing on the vessel.
- e. Be familiar with the use and operation of the vessel's VHF radios and will understand the need to monitor Channels 16, a common traffic and distress frequency, and Channel 13, a common vessel-to-vessel frequency.
- f. Be familiar with the use and operation of the vessel's Watch Alarm, and ensure it is set for an appropriate period, generally 10 minutes after dusk, and 15 minutes during daylight hours, or as appropriate as the navigational environment is forecasted or presents itself.
- g. Be familiar with the use and operation of the vessel's Navigation Lighting and ensure the proper navigation lighting is had.
- h. Be familiar with the use and operation of the vessel's Fishing Lights, trawling light and know their appropriate usage.
- i. Be familiar with proper Day Shapes and when to set and strike.
- j. If the crew member is unsure of their observations, they should immediately notify the Individual in Charge.

#### P. Fitness-for-Duty

Several studies have been conducted that demonstrate multiple health, financial and corporate operational benefits resulting from employers implementing an integrated drug-free workplace supported by a drug and alcohol testing program. Intoxicated operations are a known safety risk to workers. Costs incurred by an employer from an employee suffering injury or death can carry a significant financial burden. Additionally, the National Safety Council has identified that employers establishing a drug free workplace supported by drug and alcohol testing have significantly less absenteeism and employee turnover.

- 1. Establish a zero-tolerance substance abuse policy (drug/alcohol).
  - a. It is recommended that the substance abuse policy be in writing.
  - b. It is recommended that the substance abuse policy list the company's responsibility and the employee's responsibility.
  - c. Many marine employers incorporate their position regarding the possession of drug paraphernalia, illegal drugs, and use of prescription drugs or over the counter medications in their substance abuse policy. Additionally, any other employment actions the company plans to take should be spelled out in the substance abuse policy.

- d. It is recommended that each crewmember sign a statement stating they have read and understand the company's substance abuse (drug/alcohol) policy.
- 2. Substance abuse resource information is available on the U.S. Department of Health & Human Services website at: <u>https://findtreatment.gov/</u>

#### Q. Additional Inputs to Good Seamanship

- 1. Plan appropriate measures for the intended voyage.
- 2. Monitor weather reports.
- 3. Test steering, communication equipment, prior to getting underway.
- 4. Predict and compensate for the effects of current and tide.
- 5. Ensure the bridge is adequately manned and with trained personnel.
- 6. Give other vessels adequate sea room enabling enough time to correct for equipment failure or lapsed judgment.
- 7. Know the maneuvering characteristics of the vessel.
- 8. Switch to manual steering when appropriate.
- 9. Anchor in a safe area with proper distance from other vessels and obstructions outside of channels and fairways.
- 10. Pay out adequate anchor chain to avoid dragging (understand scope).
- 11. Have written policy that addresses falls overboard prevention.
- 12. Establish suitable means on board the vessel for the safe recovery of persons from the water and their subsequent embarkation onto the vessel.

#### R. Resources

1. The Office of Commercial Vessel Compliance, Fishing Vessel Safety Division (CG-CVC-3) website provides a wide range of topics that include (but are not limited to): training, stability, Code of Federal Regulation resources, policy/guidance, marine safety alerts, marine investigation reports, and Commercial Fishing Vessel Safety Examiner contact lists. Access the CG-CVC-3 website at: https://www.dco.uscg.mil/Our-Organization/Assistant-Commandant-for-Prevention-Policy-CG-5P/Inspections-Compliance-CG-5PC-/Commercial-Vessel-Compliance/Fishing-Vessel-Safety-Division/CVC-3-Home-Page/

Questions concerning this guidance should be directed to the Office of Commercial Vessel Compliance, COMDT (CG-CVC), Fishing Vessel Safety Division at: CGCVC3@uscg.mil.

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J. D. MYERS Chief, Fishing Vessel Safety Division, U.S. Coast Guard Office of Commercial Vessel Compliance

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