

# Risks and preventive measures

## TRAWL FISHING



National Health and Safety Awareness Plan for  
the Fishing Sector

safety  
saves  lives

**Title:** Risks and preventive measures: trawl fishing

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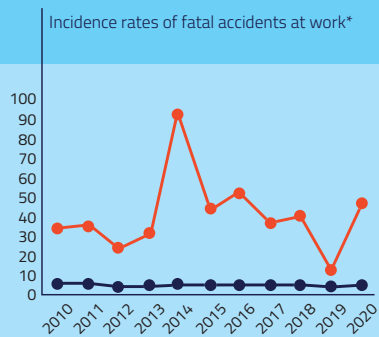
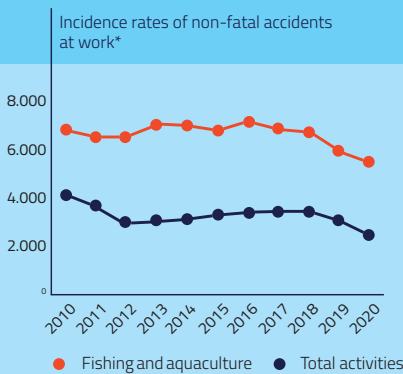
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# Fishing: a very dangerous sector

The accident rate in fishing is twice the average rate of all occupational activities.



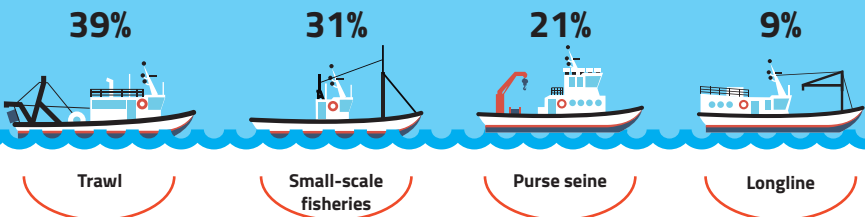
Fishing has been and continues to be one of the economic activities with the highest occupational accident rates, doubling even those of other activities. Fatal accidents are 10 times more frequent in fishing than in other sectors.



Source: Ministry of Labour and Social Economy (2020).

\*Accidents per 100,000 persons employed

## By fishing gear



- Trawl 37%
- Purse seine 33%
- Longline 26%
- Small-scale fisheries 4%



In the period 2011-2020, trawl fishing had **the 39% of serious and fatal accidents investigated** by the Labour and Social Security Inspectorate. The trawl is **the fishing technique with the highest hazard rate (37%)** if we consider the vessels registered.

Source : accidents under investigation by the ITSS (2011-2020).

## National Awareness Plan



This Plan aims to raise awareness among workers in the fishing sector of the importance of maritime safety and **health and safety at work**.

**The objective:** to contribute to improving safety at work and reducing the high accident rate in the sector.

# SEA ACCIDENTS

## Hazards of the vessel at sea

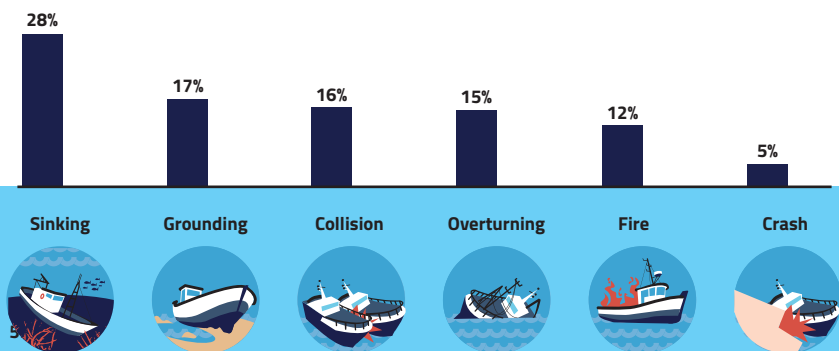
They affect the entire vessel as the workplace.  
They affect the entire crew.  
They sometimes take the lives of many workers.



**Sinking** is the most frequent sea accident due to waterways, loss of stability or flooding of spaces.

**Fires** usually start in the engine room, galley or cabins.

### Percentage of accidents



**Sinking and overturning accounted for 50% of maritime accident fatalities**

Source: CIAIM (2010-2020).

### Main causes



#### Personal factors:

not complying with the established safety rules, not using the self-inflating life jacket or not assessing the conditions of waves, wind... regarding the vessel's safety.



#### Work organisation:

lack of required training or qualifications, inadequate working methods or crew tiredness.



#### Emergency management:

lack of familiarity with emergency arrangements and procedures.

### Recommendations

Ensure the **ship's stability** (especially when hoisting), quantity of cargo and its stowage.

In the event of **adverse weather**: close doors, hatches and ports and remove water from bilges; secure the cargo and deck equipment.

Keep the **deck clear** and make sure that the drainage ports are not blocked.

**In the event of fire**, raise the alarm immediately. Use available fire-fighting equipment.

**Keep** risk areas (galley, storeroom...) and cabins (no smoking) **tidy and clean**. Keep a fire blanket next to the galley.

**Participate** in regular fire-fighting and emergency drills.

**Comply with the Convention on International Regulations** for Preventing Collisions (COLREGs).

# OCCUPATIONAL ACCIDENTS

## Hazards involved in fishing activities

They occur during the stay or the performance of a task while on board the vessel.

The most frequent accidents which occur in the fishing activity are:



Source: work accident reports (MITES 2010-2020).

## Falling is not funny!

### Falls on board and into the sea

On a vessel, falls are frequent both on deck and when embarking and disembarking.

The “man overboard” is a special form of fall, which occurs when falling into the sea.

Always wear a self-inflating life jacket on deck and, if necessary, PPE against falling from height.

- Keep the **deck and working areas as well as the passageways** clear of obstacles and debris. Remove deck irregularities or mark them with vivid paint.



- Use **ramps, gangways or ladders** to get on and off the ship, or to pass between boats tied alongside.
- Wear protective footwear with **non-slip soles**.
- Avoid working on deck in the event of **adverse weather conditions**.
- Exercise extreme caution** in tasks where there is a risk of falling into the sea.
- Do not climb** or move around on the bulwark.

## Watch your head!

### Bumps or collisions

- Watch out for **obstacles** at head height.
- Protect edges and protrusions.** Secure doors, gates and hatches. Wear a protective cap to protect against bumps and knocks.
- Keep order** and stow catches to prevent them from moving.



## Watch your back!

### Overexertion

- You can damage your back by **handling weights, frequent repetitive movements** and by adopting inappropriate postures for long periods of time.
- Maintain a **stable posture**, hold the load as close to your body as possible, avoid twisting your back and use aids whenever possible.
- If possible, use **tables for sorting** and gutting fish and use knee rests if necessary.



## Watch your hands! *Cuts*

- > You can cut your hands when **using knives and with the bones and fins** of some species. Cold weather increases the risk of cuts.



- > Keep **knives sharp and clean**. Cut in an outward direction from the body. Always wear protective gloves.

## What are you saying! *Noise*

- > High noise levels **make communication difficult** and increase the risk of accidents and can lead to deafness.
- > Wear **hearing protection** when necessary.



## Hot, cold, UV radiation! *Environmental conditions*

### *Environmental conditions*

- > When it is hot, **drink plenty of water** and take breaks in the shade.
- > **Wear suitable clothing** against wind, cold or water. Protect especially ears, hands and feet. Drink warm beverages but **avoid caffeine and alcohol**.



- > The sun damages the eyes and skin. **Cover your head and body** with work clothes and wear sunscreen and sunglasses.

## Don't burn yourself! *Contact with temperature*

### *Contact with temperature*

- > Some equipment can reach very high temperatures. Wear **suitable protective equipment** during maintenance work.
- > Beware of **splashes of hot fluids** (e.g. cylinder purging).
- > Cold burns can also occur.



## You can't see it, but you can feel it! *Contact with electrical voltage*

### *Contact with electrical voltage*

- > **Do not use defective cables**, damaged plugs or sockets. Do not pull on cables when disconnecting electrical equipment.
- > Do not use electrical equipment with **wet hands**.



## Don't get sick! *Chemical and biological hazards*

- > **Chemicals** used for cleaning, maintenance of the vessel or preservation of catches can be dangerous.
- > **Follow label recommendations** and keep them covered and labelled in their original containers and do not mix them. Wear protective equipment (gloves, goggles, etc.).
- > Be careful with confined spaces such as the ship's hold. They can accumulate toxic or flammable contaminants or lack oxygen. Follow safety procedures.
- > You can also suffer skin injuries from infections, allergies, **bites and stings** from marine species.
- > Identify **hazardous species** and wear appropriate gloves during handling. Wash with soap and hot water at the end of each shift.



# SPECIFIC OPERATIONAL RISKS

## in trawl fishing

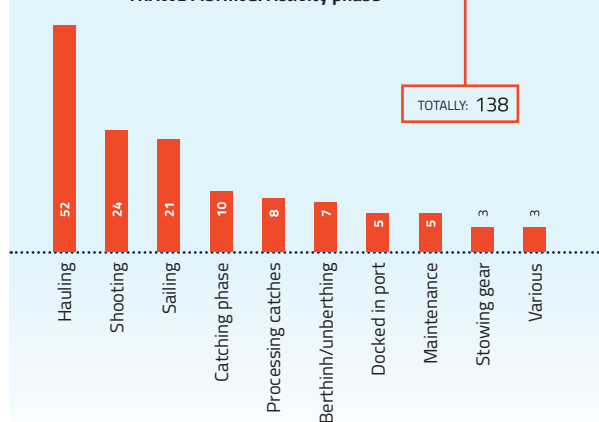


### When do serious accidents occur?

60% of these accidents occur during one of the fishing manoeuvres: shooting, trawl and especially, hauling of the fishing gear.

They are less frequent in other phases such as navigation, catch processing, the operations of berthing/unberthing and on-board maintenance tasks.

TRAWL FISHING: Activity phase



TRAWL FISHING: Forms of serious and fatal accidents (2011-2020)



TOTALLY: 125/13

Source: accidents under investigation by the ITSS (2011-2020).

### How do they occur?

The main *serious* accidents in trawl fishing are **impacts and entrapment** with elements under tension (such as ropes, cables or the fishing gear); the **bumps** (against elements of the vessel, the gear, the equipment) and the **falls** on the same level or from height.

The 3 most frequent forms of *fatal* accidents are bumps with **breakage of elements under tension**, falls into the sea and entrapment/bumps with trawl doors.



Most serious and fatal accidents occur during fishing operations and are related to:

**Elements under tension** (ropes, cables, chains, bridles, shackles, rings, etc.).

**Fishing gear** (nets, bolt ropes, floats, ballast, etc.).

**Machinery and work equipment** (winches, line haulers, haulers, snatch blocks, etc.).

Accidents due to **bumps caused by breakage of elements under tension** and entrapment with them are particularly dangerous.



- › Elements under tension must be properly selected and maintained, according to the manufacturer's instructions. **Conduct periodic inspections.** Report if you detect unmade braided rope, corrosion, etc. and remove them from service.
- › **Do not go over or under the cables** and always keep a minimum safe distance. Stay out of the working area of the winches and elements under tension when shooting and hauling the fishing gear. The area of influence of winches/line haulers, from the drums to the stern, must be signposted.
- › **Do not change sideways** during net draught/hauling.
- › **Avoid guiding cables with your hands.** If necessary, wear protective gloves.
- › **Use extreme caution** when winding cables and fishing gears, to prevent the coils from tangling and getting tangled on the way out.

**Entrapment between moving parts** of work equipment causes many serious accidents.

- › To operate work equipment one must have specific training and follow the manufacturer's instructions.
- › Moving parts of work equipment must be protected. **Never remove the protective guards.** Take precautions to avoid entrapment (tight clothing, etc.). If the equipment locks or malfunctions: immediately press the emergency stop.
- › Operators shall have an **adequate view** of the machinery and of the crew and an effective system of communication with the bridge and the deck (boatswain). During operation, the machines will always be manned.





The operation of the **trawl doors** from the stern gantry is a critical operation.

**The shooting, hauling and lashing** of the doors entails a high risk of **impact** (due to the rolling of the door) and **entrapment** (with the cables, chains, snatch blocks and hooks).

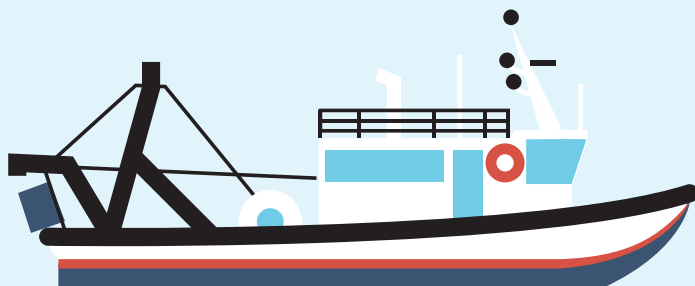
There is also a risk of **falling into the sea**, especially in rough seas.

- » The most experienced and trained crew should perform the hooking/unhooking of the doors, **using hand signals** and waterproof gloves that also give protection against mechanical hazards.
- » **Use "G" hooks** instead of line ends to accommodate the pennant. Do not handle the door after removing the safety hook.
- » **Do not place your body between the elements** (door and transom) until the door is secured by the safety hook and tensioned properly.
- » **Do not climb onto the bulwark** to attach the chains or remove any part of your body over the side of the vessel and if necessary, use a fall restraint system.
- » **The operator of the capstan** must clearly see the crew with the doors and not release the door until this is back in the safe area.



**Falls at the same level** due to tripping, slipping or loss of balance cause many serious accidents during the handling of catches, mainly due to accumulation of materials on the deck (bait cans/crates, ropes, fish scraps, ice, hydraulic oil), instability of the vessel, poorly painted decks or decks with badly worn paint.

- » **Proper stowage** of items on deck: ropes and cables coiled or on line haulers.
- » **Fishing gears, crates or drums**: out of passage areas and securely lashed.





During trawling manoeuvres, there are frequent **bumps and entrapments with fishing gears and injuries**, especially on the hands.

When hauling and manoeuvring with the codend, there are risks of **bumps, collisions or crushing by hanging loads** (rolling of the load, collapse of the load or of the crane itself).

- › During the shooting and hauling of the fishing gears, **do not stay in risk areas**.
- › If a float or element of the fishing gear **entangles**: immediately drop the clothes.
- › **Move very carefully** over the codend. When untying the bottom, keep the closed part behind your back to avoid being dragged with the catch.
- › Do not stand in the vicinity of **hanging loads**, especially under the codend.
- › **Lifting gear** shall be suitable and hooks shall have safety latches.
- › **Wear a protective helmet** when manoeuvring with the codend.
- › **Do not empty the net of fish** during the hauling.



**Falls into the sea during operations** are frequent and may be mortal.

In the shooting and hauling, you can get caught in the fishing gear and be swept out into the sea.

On industrial trawlers there is a risk of falling into the sea through the stern ramp.

- › **Always wear a self-inflating lifejacket** when working on deck and, if necessary, use a fall restraint system.
- › **Before opening the stern ramp gate**, the crew shall position themselves in a safe area behind the walls on both sides of the stern.
- › **The stern gate** shall remain open only for the purpose of shooting/hauling the net.



There is a **risk of overexertion and forced postures**, especially in door manoeuvres and during the sorting of catches.

- › Do not handle loads of more than 25 kg on your own.
- › **Avoid sorting** on the floor as much as possible by using tables or platforms.
- › **Use mechanical aids** to operate trawl doors and to lift/carry heavy loads or handle them among several people.



There is a risk of **shipwreck** due to cargo shifting (stowage breakage) or flooding through the open stern ramp (industrial vessels).

- › **Avoid cargo shifting** and match the codend size to the vessel's capacity.
- › **Secure the breakwater before opening the hatchway** of the reservoir to prevent water from entering. The reservoir door must be watertight.

# Take a break!

## Watch out for fatigue

**Fatigue can increase navigation errors**, sea accidents and the risk of being injured due to operational accidents. Fatigue can be caused by long working hours, night shifts and high physical strain.

- » If possible, **get at least 6 hours of uninterrupted sleep** and **take breaks of about 20 minutes** during the day to ease tiredness.
- » **Follow a healthy diet** and drink enough water to stay well hydrated. Stay fit.
- » **Some medications, alcohol, tobacco** and other substances can affect alertness/performance as well as cause insomnia or drowsiness.



## Duties and responsibilities

### Shipowner

Ensure the effective protection of the crew.

**TAKE** measures to ensure that ships are operated without endangering the safety and health of the crew.

**PROVIDE** the necessary means to ensure safety on board.



### Skipper or captain

Ensure safety and health on board.

**FOLLOW** the orders or instructions of the shipowner.

**SUPERVISE** tasks, assigning them only to trained personnel.

**ENSURE** the correct condition and location of safety, emergency and protective equipment, as well as notices, instructions and ship's plans.

**ENSURE** that the crew receives training and information on occupational risk prevention and that emergency drills are carried out.



### Crew

For your safety and everyone else's.

**RESPECT** the safety measures adopted.

**FOLLOW** the safety instructions received.

**USE** the means and protective equipment provided correctly.

**REPORT** immediately any situation that, in your opinion, involves a risk to safety and health.




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