

# Risks and preventive measures

## PURSE SEINE FISHING



National Health and Safety Awareness Plan for  
the Fishing Sector

safety  
saves  lives

**Title:** Risks and preventive measures: purse seine fishing

**Author:** Instituto Nacional de Seguridad y Salud en el Trabajo - National Institute for Safety and Health at Work (INSST), O.A., M.P.

**Prepared by:**

Esther Duque Casas

Esperanza Valero Cabello

Centro Nacional de Medios de Protección - National Centre for Means of Protection (CNMP), INSST

**Collaborators:**

Maritime Fishing Sector Working Group. National Commission for Health and Safety at Work (CNSST).

Labour and Social Security Inspectorate (ITSS).

Social Marine Institute (ISM).

Directorate General of the Merchant Navy (DGMM).

General Secretariat for Fisheries (SEGEPESCA).

Instituto de Seguridade e Saúde Laboral de Galicia (ISSGA).

Cantabrian Institute for Safety and Health at Work (ICASST).

Institut Valencià de Seguretat i Salut en el Treball (INVASSAT).

Directorate General for Labour and Labour Welfare of the Regional Government of Andalusia.

Basque Institute for Health and Safety at Work (OSALAN).

Canary Islands Institute for Safety at Work (ICASEL). (ICSSL).

Spanish Confederation of Business Organisations (CEOE).

Confederation of Small and Medium Enterprises (CEPYME).

Spanish Shipowners Association (ANAVE).

Joint Prevention Service, Cooperative of Fishing Shipowners of the Port of Vigo (ARVI).

Federation of External Prevention Services (ASPA).

Workers' Commissions (CCOO).

General Workers' Union (UGT).

**Edited by:** National Institute for Safety and Health at Work (INSST), O.A., M.P.

C/ Torrelaguna, 73 - 28027 Madrid.

Tel. 91 363 41 00, fax 91 363 43 27

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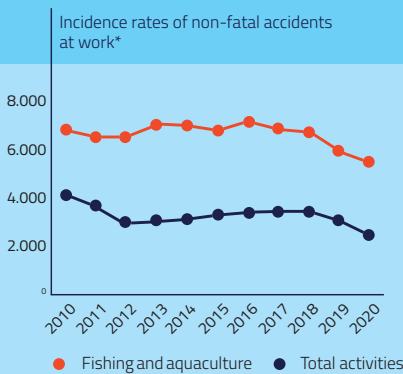
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# Fishing: a very dangerous sector

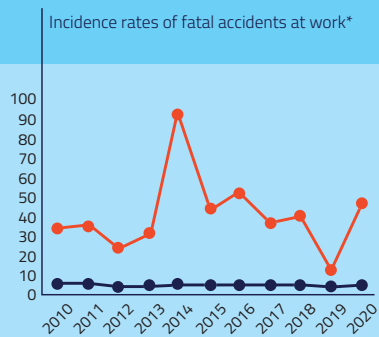
The accident rate in fishing is twice the average rate of all occupational activities.



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

39%



Trawl

31%



Small-scale fisheries

21%



Purse seine

9%



Longline

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



In the period 2011-2020, purse seine fishing had **the 21% of serious and fatal accidents investigated** by the Labour and Social Security Inspectorate.

The purse seine fishing is **the second fishing technique with the highest hazard rate (33%)**, 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

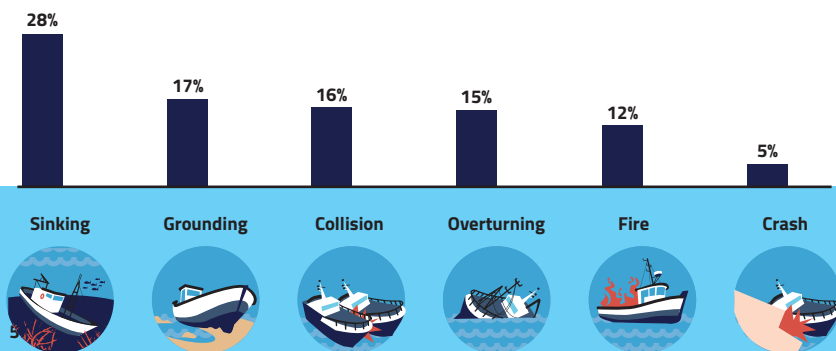
They affect the entire vessel as the workplace.  
They affect the entire crew.  
They sometimes take the lives of many workers.



**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.

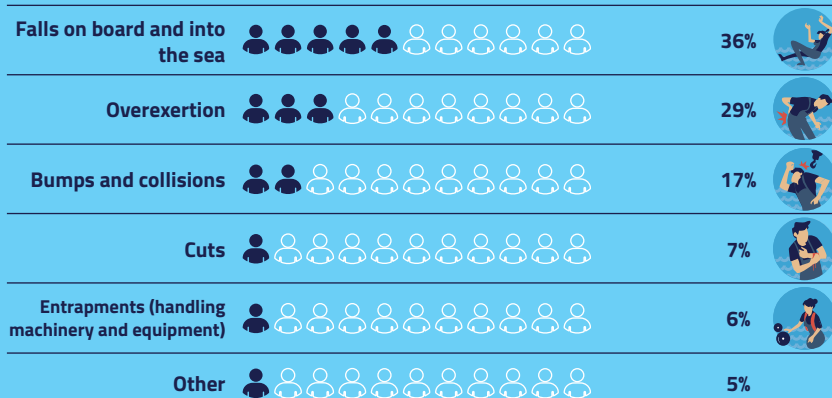
**Comply with the Convention on International Regulations** for Preventing Collisions (COLREGs).

# 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*

- > 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*

- > 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*

- > **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 purse seine fishing

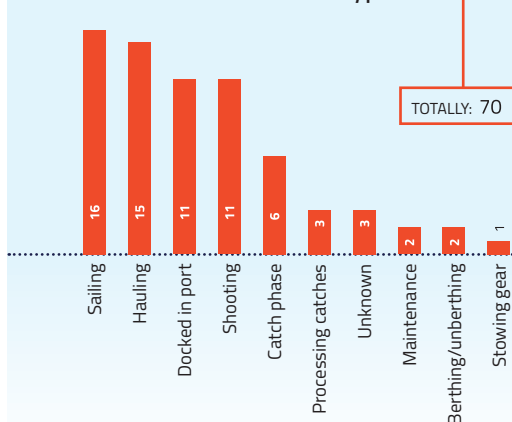


### When do serious accidents occur?

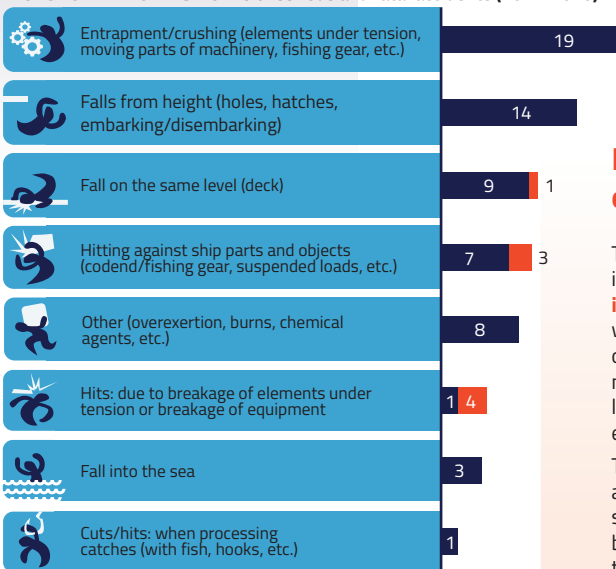
Over 40% of these accidents occur during one of the fishing manoeuvres: shooting, purse seine and hauling of the fishing gear. Fishing at night increases the risk of accidents.

Over 20% of these accidents occur during navigation phase.

PURSE SEINE FISHING: Activity phase



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



TOTALY: 62/8

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

### How do they occur?

The main *serious* accidents in purse seine fishing are **impacts and entrapments** with elements under tension or between moving parts of machinery, falls on the same level and **impacts** against elements of the vessel.

The most frequent *fatal* accidents are: falls into the sea and impacts due to breakage of elements under tension.



Most serious and fatal accidents occur during fishing operations and are related to:  
**Elements under tension** (ropes, cables, chains, shackles, hooks, rings, etc.).  
**Fishing gear** (nets, bolt ropes, floats, ballast, etc.).  
**Machinery and work equipment** (winches, line hauler, hauler, cranes, etc.).  
Accidents due to **impacts caused by breakage of elements under tension and entrapment** with them are particularly dangerous, especially in the hauling of the fishing gear and the use of the hauler.

- › Elements under tension must be **properly selected and maintained** according to the manufacturer's instructions. **Carry out periodic inspections**, reporting if you detect hooks without latches or any other defective element and remove them from service.
- › Do not walk over gear, ropes or other items and other items which could be tensioned and always keep a minimum safe distance from those elements under tension or running machines.
- › **Avoid guiding cables with your hands.** If necessary, wear protective gloves.



**Entrapment between moving parts of work equipment** causes many serious accidents during shooting, purse seine of fish school and hauling of the fishing gear.

- › To operate work equipment one **must have specific training** and follow the manufacturer's instructions.
- › **Pay attention when** shooting and hauling and do not stay in risky areas.
- › Moving parts of **work equipment must be protected.** Never remove the protective guards. It is recommended to 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. During operation, the machines will always be manned.





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

- » Stow **items properly on deck**: ropes and cables coiled or on line hauler; gear, crates or drums out of passageways and securely lashed.

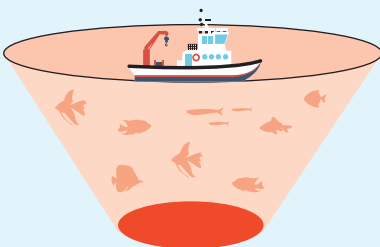


In the manoeuvres of shooting the gear and encircling the school of fish, accidents are frequent due to **bumps with the elements of the gear, entrapment** of limbs with ropes or nets and subsequent dragging into the sea. During the hauling, there may be entrapments or bumps with the codend/fishing gear.

- » The **Liaison Officer** is a key figure in the absence of the skipper's vision at the stern. He/she receives and conveys orders from the skipper to the crew, and vice versa, and warns of any eventuality. **A signal code must be used.**
- » During the shooting, **do not invade the stowage area of the gear** and do not tamper with the purse seine rope rings. **Do not drop the floating anchor** without verifying that the crew is in a safe area.
- » When hauling and stowing to the stern, **do not stand between the winch and the line haulers** of the purse seine rope, avoid going under hanging loads (bridle) and position yourself if possible in front of the gear's bridle.
- » It is important to **coordinate the hauling-stowing phases** and to adjust the hauling speed in order to ensure that the loosening of the purse seine rope rings is safe.
- » In the formation of the codend and the loading of the fish, **check the strap-gear joints**, the correct passage of the purse seine rope through the rings and the condition of the ropes, slings and machinery.
- » Do not start transferring fish without notifying the **liaison officer**. If you brail with a pump, dip the nozzle before starting it.



**Loads hanging** on the purse seine net cause accidents due to **bumps, collisions and crushing** as a result of rolling or collapse of the load or the crane itself, especially during hauling and when handling, sorting and storing catches.



- » **Avoid standing** in the vicinity of hanging loads, under haulers or a pile of fishing gear during the manoeuvre.
- » **Control the rolling** of loads with guide ropes and respect signs or barriers in dangerous areas.
- » **Wear a protective helmet.**



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

In the hauling and encirclement of the school of fish, you can get caught in the fishing gear and be swept out into the sea. Hauling and brailing are also dangerous if you work above the gunwale level.

- › **Do not work over the nets or stick your body out too far** when brailing. If a float or element of the fishing gear entangles with clothing, cut it off immediately. In poor weather, don't work alone.
- › **Always wear a self-inflating lifejacket** when working on deck and, if necessary, a restraint system against falling from height.



There is a risk of **overexertion and the adoption of forced postures** when shooting the fishing gear and the encirclement of the school of fish. During hauling, when pulling the net and when brailing, as well as when handling catches and unloading in port, there is a **risk of musculoskeletal disorders** due to physical demands, forced postures and repeated movements.

- › When brailing, **use vacuum pumps or mechanical aids** (crane). If hand-guided, use a brail net with assisted guidance and do not make more than 30 lifts in a row.
- › **Do not handle loads of more than 25 kg** on your own. Use mechanical aids to lift/carry heavy loads or handle them among several people.
- › It is recommended to **alternate tasks** in order to reduce the physical burden.



When launching and retrieving the **auxiliary vessel**, you may be injured by the cables/ropes. You **can also fall overboard** by being transferred to/from the vessel and capsized in rough seas.

- › **Radio communication** with the skiff shall be maintained. Always wear a life jacket and exercise extreme caution in rough seas.



A specific risk is **the sinking due to overloading** and during hauling, as the entire catch remains in the codend on the port side, compromising the stability of the vessel.

- › The bolt rope and the part of the codend attached to the boom or railing of the vessel **must be able to be released** quickly if the weight is excessive and the stability of the vessel is endangered.
- › **If the vessel heels** and it is not possible to release the fish, immediately haul or cut the net.
- › When stowing the fishing gear, **avoid blocking the scuppers** to allow the deck to drain.

# 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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