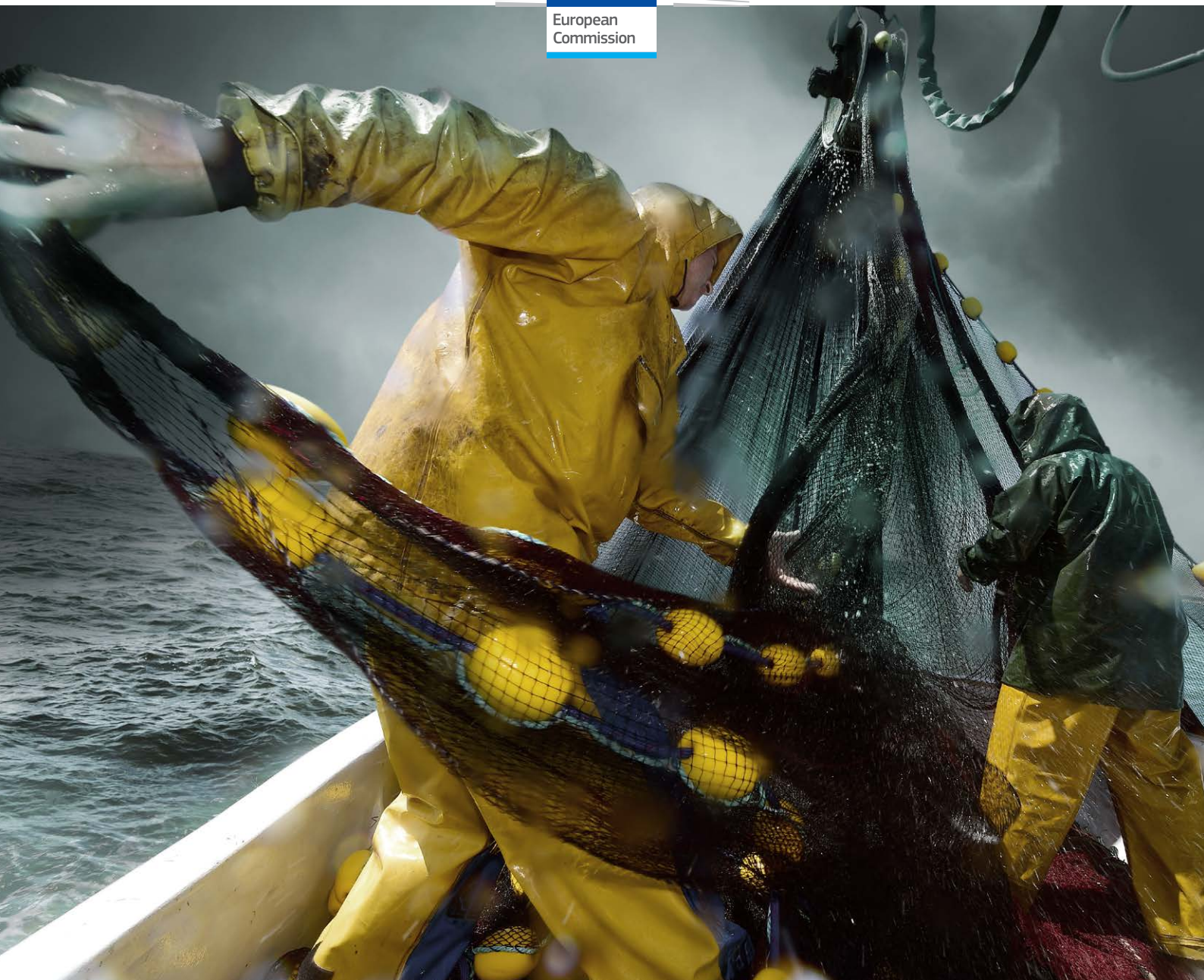




European guide for risk prevention in small fishing vessels

European guide for risk prevention in small fishing vessels

European Commission

Directorate-General for Employment, Social Affairs and Inclusion
Unit B.3

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Disclaimer

The material contained in this Guide is for information and reference purposes only. It is not intended to substitute legal or informed professional advice on health and safety.

The adoption and use of the information and practices described in the guide may not meet all specific needs, requirements or obligations of individual countries and their fishing fleets. Nonetheless, the drafters of the guide hope it brings self-awareness and promotes a safer culture in fishing.

In no way should the contents presented in the guide reduce or limit the obligations imposed by national authorities, and particularly the requirements of EU Directives in the field of health and safety protection.

Vessel owners, skippers and crew members have a duty to identify hazards and implement protective measures to eliminate or reduce the risk of personal injuries and accidents.

Background

Small fishing vessels account for more than 80 % of the European Union fishing fleet.

The number of fatalities, injuries and vessels lost annually remains 'unacceptably' high when compared to other industries.

Report COM(2009) 599 on the practical implementation of Health and Safety at Work Directives 93/103/EC (fishing vessels) ⁽¹⁾ and 92/29/EEC (medical treatment on board vessels), concluded that there has been no significant impact of those regulations for crews in small fishing vessels; and recommended the drawing up of a non-binding guide for vessels under 15 m in length.

This guide is the response to that recommendation. It aims to clarify at EU level key concepts and help Member States to meet their obligations under the Framework and individual directives.

A Monitoring Committee, specifically appointed by the European Commission, and composed of representatives from governments, employers and trade unions has supported the contents and development of this guide.

Although inspired by several safety and health regulations applied in various Member States, the guide does not constitute a legal binding document. Its main purpose is the collection of best practices which wherever applied could help to prevent accidents on this singular and hostile environment, the sea.

Fishing is an ancient activity, many times passed down from one generation to another. The majority of fishermen who operate these vessels are self-employed, hence, risk tolerant by nature. The guide is a first step towards the harmonisation of current standards for training and education.

⁽¹⁾ <http://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1423219304125&uri=CELEX:52009DC0599>

About this guide

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How to read the guide

This guide is aimed at providing information and guidance for all European small fishing vessel ⁽²⁾ operators and crew members. It is organised into six independent modules, hence, readers do not have to read them in any particular order but 'jump in' and get the information they need. The structure of Modules I, II, and III is rather similar and comprises three main parts: the first presents a general statement about the possible danger or concern; next, a list of risks is identified; and then, the best available practice recommended. Module IV refers to accidental events. Lastly, Modules V and VI deal in most detail specific subjects, such as the risk assessment, stability, first aid and drills, among others. These two modules also propose several checklists which readers can refer to. Finally, the annex highlights international instruments with particular impact in small scale fishing. The annex is aimed at Fishermen's Associations rather than the individual fisherman.

All the above is also available on a CD-ROM, which illustrates key practices on board. It is essentially an interactive version of certain sections of the guide, where the primary aim is to encourage self-learning, and assist training at institutes or colleges.

More information on EU legislation and initiatives is available online on the following websites:

European Commission, Health and safety at work:

<http://ec.europa.eu/social/main.jsp?langId=en&catId=148>

European Agency for Safety and Health at Work (EU OSHA):

<https://osha.europa.eu/en?set-language=en>

⁽²⁾ Small fishing vessels refer to vessels of less than 15 metres.

Scope of the guide

This guide intends to set out all that you need to consider for operating your vessel safer and protect the health of you and your crew. Below is a brief description of the contents of each module.

Module I	The vessel	It covers many aspects such as the soundness of the vessel and its equipment
Module II	The crew	It is dedicated to the health and safety of crew members
Module III	Fishing operations	It deals with operating safely in four main fishing methods including Trawling, Potting, Netting/Lining/Jigging, and Beam trawling and dredging
Module IV	Real case events	It describes incidents that have happened, and provides lessons for preventing them to happen again
Module V	Risk assessment	It presents checklists and guidance on risk assessment approaches
Module VI	Additional information	It provides checklists and complementary information that fishermen can refer to in concerning health and safety
Annexes	Legislation (EU OSH Directives, IMO, FAO, ILO)	

This guide is non-binding but readers should be aware that regulations at European and national levels exist and must be followed. It offers guidance and in addition to the regulations, will help you to make your fishing safer.

Glossary of terms and definitions ⁽³⁾

Accident at sea	An accident at sea is an event that happens to the ship at sea, such as a collision or grounding. It encompasses all crew accidents linked to the operation of the ship.
Accident at work	An accident at work is an accident involving a crew member during the normal working operations, including activities such as: the unloading of the catch or when boarding or leaving the vessel.
Anode	Sacrificial material attached to the hull and rudder to protect the propeller, propeller shaft and rudder spindle from corrosion.
Bag lifting	The action of lifting the 'cod end' (the bag) of the trawl to empty the catch out.
Beam trawling	A fishing method for catching fish that lay on the sea bed such as sole and plaice. The trawl is held open by a beam and chains from the beam disturb the seabed to cause the fish to lift up and be caught in the trawl.
Buddy line	Length of cord which can be tied or otherwise fixed to another person's suit, or lifejacket, or to a liferaft or other objects, so as to keep the wearer in the vicinity of that person or object with a view to making location and thus rescue easier.
Catch	Fish or shellfish caught by the vessel.
Coming fast	When the fishing gear snags on an obstruction on the seabed and stops the vessel, this is known as 'coming fast'.
Creel	A type of trap for catching crabs and lobsters.
Dahn	A pole attached to a float with a flag on the top of the pole. Dahns are used to float on the surface to mark the ends of fishing gear.
Dahn tow	The rope attaching the dahn to the anchor that holds the end of the net/line in position.
Doors	Known as 'otter boards', the rectangular or oval structures that attach to the wing ends of the trawl and through the hydrodynamic forces of being towed through the water spread the trawl mouth open.
Dredging	Fishing method for shellfish buried in the seabed. Dredges with teeth to dig into the sand are towed along digging up and containing scallops, clams etc.
Decibel	A unit of measurement of the level of noise.
Fastener	A term used to describe a seabed obstruction that fishing gear snags up on.
Fouled gear	A term used to describe when fishing gear becomes entangled in its self and consequently require clearing.
Foundering	Vessel takes water onboard and eventually sinks.
Freeing port	An opening in the vessel's bulwark to allow water to run off the deck.
Gear	Generic term for the fishing equipment be it the trawl, doors and warps; or, pots, ropes, dahns etc.
Gear mending	The act of repairing damaged fishing gear. (Usually netting-net mending)
Grounding	The act of running aground.
Gurdie	A reel, sometimes square or hexagonal, that is used for jigging, especially for fishing for mackerel.
Hazard	Term used in risk assessment that refers to anything that may cause harm.
Hypothermia	Condition where body core temperature is below 35 °C.
Inflatable buoyancy	For lifejackets: buoyancy that is achieved by inflating a bladder.
Inherent buoyancy	For lifejackets: permanent buoyancy that is present in the item.

⁽³⁾ The Glossary of terms and definitions is to be considered only for the purposes of the Guide itself, since definitions such as the one for Accident at work can differ according to the national legislation of the different EU Member States.

Inherent buoyant material	Buoyancy provided by a material, forming a permanent part of the suit, with a density less than that of water.
Jigging	Fishing method using lures with hooks that are 'jigged' (moved up and down) to attract fish.
Lifting becket	A rope/strop around the cod end section of the trawl to be used to lift the cod end aboard.
Lining	Fishing method using baited hooks spaced out along the length of a line.
Netting	Panels of mesh made of twine or nylon that are used to make a trawl or gill or tangle nets.
Overall length	The length of the vessel from the maximum points of the hull at the bow and stern.
Potting	Fishing method for catching shellfish crabs and lobsters, in baited pots or creels.
Purse seine	A large circle of netting that is set around a shoal of fish. The bottom of the net can be drawn together to form a 'purse' preventing fish escaping.
Personal flotation devices	Garment or device which, when correctly worn and used in water, will provide the user with a specific amount of buoyancy which will increase the likelihood of survival. PFDs can be divided into two main classes: (1) Lifejackets, which provide face up in-water support to the user regardless of their physical conditions; (2) Buoyancy aids, which require the user to be conscious; and make swimming and other postural movements to maintain their face and breathing zone above the water.
Regulations	The requirements that are legally enforced in member countries of the European Union.
Risk	Is the chance, high or low, that someone will be harmed by a hazard.
Risk assessment	Considering all possible risks and methods to prevent or protect against them.
Rule beater	A vessel designed to maximise the fishing potential within the restrictions of the regulations. Typically, short in length but with a large breadth and depth.
Seine	A net fishing system that sets a circle of netting around a shoal of fish.
Shooting	The act of paying out or setting the fishing gear.
Small fishing vessel	For the purposes of this guide; a vessel less than 15 metres overall length.
Stability	The ability of a vessel to return to the upright.
Stopper chain	A continuous loop of chain that is wrapped around the warp and looped through itself such that it grips the warp.
String	Term given to a number of pots or creels including the rope that they are connected to.
Net tonnage	A volumetric method of accessing the carrying capacity of a vessel.
Towing chains/wires	Chains or wires that attach the warps via 'stopper chains' to a central towing point at the stern of the vessel.
Trawling	A fishing method in which a net is towed along catching the fish in its path.
Velcro	A trade name for two matching fabrics that have a loop and hook structure that enables them to lock together. It is commonly used as a fastener for lifejacket covers.
Warps	The wires or ropes that are used to tow the trawl.
Watertight integrity	The ability of the vessel to resist the ingress of water.
Work-related musculoskeletal disorders	Physical work activities or work place conditions which are likely to cause or contribute to injuries and disorders of the muscles, nerves, tendons, ligaments, joints, cartilage and spinal disc. For example, muscle strains and low back pain.

Glossary of abbreviations

BIM	Bord Iascaigh Mhara or Irish Sea Fisheries Board, Ireland
dB	Decibel
EC	European Commission
EPIRB	Emergency position indicating radio beacon
EU	European Union
FAO	Food and Agriculture Organisation
GRP	Glass reinforced plastic
ILO	International Labour Organisation
ISO	International Standards Organisation
IMP	Institut Maritime de Prévention, France
IMTM	Institute of Maritime and Tropical Medicine, Medical University of Gdansk, Poland
m	Metre (s)
MAIB	Marine Accident Investigation Branch, UK
MCA	Maritime and Coastguard Agency, UK
MOB	Man Overboard
PFD	Personal Flotation Device
PPE	Personal Protective Equipment
QCATM	Questionnaire sur les Circonstances d'accidents du travail maritime
RA	Risk Assessment
SART	Search And Rescue Transponder
Seafish	Sea Fish Industry Authority, UK

Module I • The vessel

1. OWNER'S RESPONSIBILITIES
2. WHAT DO STATISTICS SHOW?
3. PROMOTING A SAFETY CULTURE
4. RISK ASSESSMENT
5. HOW TO ENSURE YOUR VESSEL'S SUITABILITY?
6. DEALING WITH EMERGENCIES
 - 6.1. EMERGENCY PROCEDURES | MAN OVERBOARD (MOB)
 - 6.2. EMERGENCY PROCEDURES | FIRE
 - 6.3. EMERGENCY PROCEDURES | HELICOPTER RESCUE
 - 6.4. EMERGENCY PROCEDURES | ABANDONING THE SHIP
7. STABILITY, THE HIDDEN DANGER!
8. GENERAL WORKING AREAS
9. WATCHKEEPING
10. ACCOMMODATION/GALLEY
11. ENGINE ROOM/SPACE
12. BOARDING AND LEAVING THE VESSEL
13. PLANNING THE FISHING TRIP
14. FOULED GEAR AND GEAR MENDING
15. MAINTENANCE WORK
16. BEACH OPERATIONS
17. LANDING OPERATIONS
18. SINGLE-HANDED WORKING



**FISH
SAFELY**

1. OWNER'S RESPONSIBILITIES

BE AWARE OF REGULATIONS

BE RESPONSIBLE FOR YOUR OWN HEALTH AND SAFETY

Regulations can be difficult to read and interpret but the skipper (vessel's owner or operator) needs to be aware of regulations that he is responsible for.

In many instances, the skipper is the owner of the vessel and is the responsible person. However, where the skipper is employed by a vessel owner, the owner has the responsibility to ensure that the skipper is operating the vessel safely. Without the skipper (vessel owner or operator) being aware of regulations and acting to comply, serious consequences may follow.



HAZARDS AND CONSEQUENCES



I-1. French trawler in harbour (Yann Davalo © European Union).

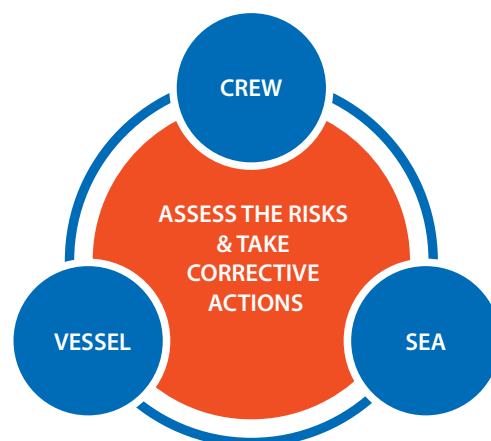
- Lives will be at risk if safety is not properly considered and provision made.
- Sea conditions may exceed the vessel's capacity to operate safely.
- The human factor is the cause of many accidents and can be attributed to:
 - Inadequate training;
 - Lack of experience and skills;
 - Too few crew members and fatigue.

NB: Failure to comply with regulations may result in prosecution.



CONTROL MEASURES

- Irrespective of existing mandatory requirements under the applicable regulations you should adopt a voluntary and proactive safety approach at all times with respect to:
 - Risk assessment;
 - Personal flotation devices;
 - Personal protective equipment;
 - Requirements for the use of work equipment;
 - Certification and inspection of lifting equipment;
 - Accommodation, food and drinking water on board.
- Ensure proper training for all the crew, including refresher training in safety, manual handling and in fishing gear and machinery operation.
- Make provision for health protection and medical care, particularly in the event of serious injury or illness that may result from working on the vessel.



I-1. The risk assessment cycle.

2. WHAT DO STATISTICS SHOW?



DON'T BECOME A STATISTIC

CAUSES OF MOST FATALITIES

About half of the fatalities in the fishing industry are due to the vessel itself. The figure below presents the number of fatalities in Portugal.

I-2. Fishermen fatalities by cause in vessels < 15 m, Portugal, 2000-2010

Vessel foundering		30
Falling overboard		8
Mechanical failure		5
Operating the winch		1
Other		3
Total		47

Source: Mutua dos Pescadores, Portugal, 2011.



DON'T BECOME A STATISTIC

CAUSES OF MOST ACCIDENTS

The table below presents the situation in the United Kingdom, as can be seen, the largest cause of incidents in small fishing vessels occur due to machinery failure.

I-3. Most common incidents to vessels < 15 m by cause, UK, 2008

Machinery		108
Grounding		16
Flooding		13
Foundering		12
Collision		11
Fire		4
Capsize		2
Contact		1
Total		167

Source: MAIB.



DON'T BECOME A STATISTIC

MOST COMMON INJURIES

In France, the **four** largest causes of injuries among fishermen are due to falls into docks, entangled in the fishing gear, back strain, wrist injury and cuts. See the table below.

I-4. Reported causes and types of injuries to fishermen in vessels < 15 m, France, 2005-2009

Fall into docks		730
Entangled in gear		668
Strain (back/wrist)		635
Cuts		528
Not specified		328
Struck by gear		308
Eye hurt by metal		105
Falls overboard		44
Burns		26
Asphyxiated by fumes		14
Total		3 386

Source: IMP/QCATM database, 2010.

3. PROMOTING A SAFETY CULTURE



BE PROACTIVE

SAFE PRACTICES SHOULD BE PART OF OUR DAILY LIVES

Until persons have been closely involved with an accident, especially a death, it is hard to appreciate the full effect on everyone.

'I tragically lost one of my crew during a routine trawling operation.

A crew member lost his balance when a rope parted. This came as a huge shock for me because I always believed that someone would last maybe 5-10 minutes in the water in good sea conditions.

He was in the water no longer than 2-4 minutes. Unfortunately he was not wearing a lifejacket. That has changed now. My crew has to wear PFDs now and I have signed the Risk Assessment Book to say they will wear them. You think that the worst things happen in the worst weather conditions, on this occasion it was not.

The risks are there 24 hours/7 days regardless of the conditions.'



HAZARDS AND CONSEQUENCES

An accident, especially with loss of life, has serious effects not only on you but on many people too.

Injuries may result in the inability to work and obviously death has a devastating impact on the family and friends.

Difficulties may be experienced with insurance companies not paying out until the body is recovered.

There are also financial problems when the major bread-winner is lost.

Even colleagues often feel the effects of the accident and may have difficulty in continuing with normal life.



CONTROL MEASURES

- Carrying out risk assessment, as this makes you aware of risks and the control measures to be put in place to prevent and combat them;
- Understanding that good practices protect the health of the crew and your business too;
- Not allowing efficiency on deck to compromise safe practice;
- Being aware of and using any guide and information regarding safety;
- Being aware of and implementing any legislative requirements relating to health protection and safety.



BE PREPARED

THINK ABOUT THE HAZARDS AND GUARD AGAINST THEM

Risk assessment means thinking about the possible dangers and deciding what you can reasonably do to prevent or guard against them.

Risk Assessment is required in all workplaces and it is the responsibility of your employer or vessel owner to ensure that the workplace is safe and healthy for all persons involved.

A fishing vessel is a workplace and the vessel operator must ensure that it is safe and healthy for the crew and other persons that may have occasion to be on the vessel. This includes persons crossing the vessel to reach one moored alongside.

On a fishing vessel there are obvious dangers such as falling overboard, the vessel sinking or a fire. There are possible slips trips and falls which could have minor or serious consequences. There are health concerns such as lower back, or arm and shoulder injuries from lifting and carrying, repetitive strain injuries from gutting or baiting, hearing loss from high noise levels and stress and fatigue causing physical and mental pressure.

Fishermen are usually well aware of these hazards but often simply accept them as part of fishing.

By carrying out a risk assessment you will:

- Make your fishing operation safer and healthier;
- Comply with the law;
- Demonstrate that you did take 'due care'.

See Module V for more information on risk assessment.



I-2. Think about the vessel (Beate Gminder © European Union).

5. HOW TO ENSURE YOUR VESSEL’S SUITABILITY?

HAZARDS AND CONSEQUENCES

- Vessels deteriorate rapidly if not well maintained. A planned maintenance programme is essential.

CONTROL MEASURES

WATERTIGHT INTEGRITY

- Check that the hull and deck are in sound condition with no potential holes through rust, sprung planks or damaged GRP (Glass Reinforced Plastic).
- All hatches and doors must be capable of being securely closed and vents must have a means of closure. Windows need to be effective at holding out the water.

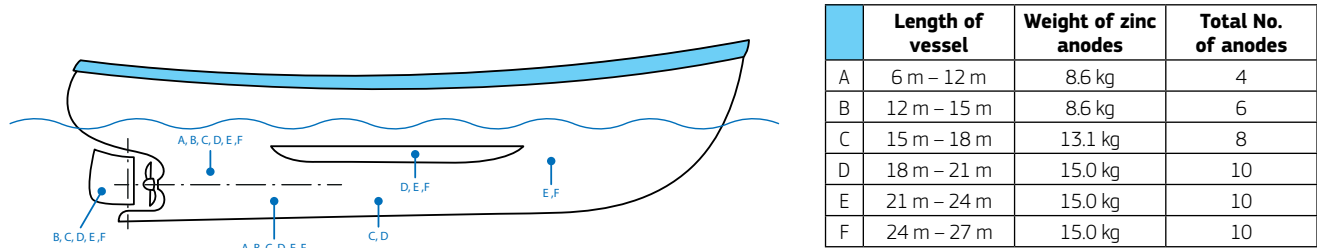
STABILITY AND STRUCTURAL CHANGES

- Over the years fishing vessels are often altered to suit a different fishing method, or major items such as the main engine or the winch are replaced. The vessel, that originally was considered to be stable, may no longer be so.
- A modern high speed lightweight replacement engine will not offset the weight of a bigger more powerful winch on deck in the same way that the original heavy engine and smaller winch did. Many vessels have a shelter deck added and a stern gantry and perhaps a net drum. Potting vessels try to carry more gear by stacking them up high on stern structures. Adding weight high up on the vessel will dramatically reduce the level of stability and a proper check by a qualified person must be made.

ANODIC PROTECTION

Check the condition of the anodes to ensure that stern shaft, propeller, rudder shaft and any hull skin valves are protected.

Blocks to be streamlined and have steel welding lugs cast into them.
NB: Sacrificial anodes also fitted in way of sea water inlets if of non-ferrous metal.



I-5. Location and quantity of anodes (Adapted from FAO, Paper 239).



CONTROL MEASURES

STEERING GEAR

Check that it is in good working order.

FREEING PORTS

If the vessel is decked make sure that the freeing ports are always clear of obstructions.

PUMPING SYSTEMS

Ensure that the bilge and other pumping systems are effective and will pump water out of the hull.

PROPULSION

Are the main engine, gearbox, propeller shaft, stern gland and propeller in good condition?

See related incident in Module IV:

7 — The engine, your vessel's heart (flooding, capsize and death).

SEAWATER SYSTEMS

Leaks in the seawater cooling system have sunk many vessels so check that sea inlet valves, hull connections, heat exchangers, discharge valves, pumps and pipework are all in good condition.

BILGE LEVEL ALARMS

Problems with poor electrical connections are often a cause of failure but a working bilge level alarm is essential on all decked vessels. They should be checked before every trip.

ELECTRICS

Check the condition of the electrics and batteries to avoid fire! Batteries must be well ventilated to vent off explosive gases and no smoking or naked flames in the vicinity of them. Look out for loose items or tools left on the battery box, they can cause shorting across the terminals.

See related incident in Module IV:

13 — The electrical system (fire in the engine room).

NAVIGATION

Is the navigation equipment on the vessel adequate for your area of operation? Does it have any defects? Is there any back up in the event of failure.

COMMUNICATION

Is the communication equipment on the vessel in good order and is it adequate for your area of operation? Is there any backup system? Have you emergency position indicating or reporting system such as an EPIRB?

WORKING SINGLE HANDED

Is the vessel equipped to provide as much safety as possible? Lifeline in place, overboard ladder, EPIRB, etc.

See section 18 'Single-handed working' in this module.

6. DEALING WITH EMERGENCIES



CARRY OUT DRILLS

WHEN THE EMERGENCY OCCURS IT IS TOO LATE TO READ THE GUIDE BOOK!

In an emergency, knowing what to do and having the right equipment available is vital. All persons on board should have attended safety training courses and regular drills should take place as appropriate.

Be prepared for situations, as below: Man overboard: At least 25 % of the deaths in fishing occur when persons fall, or are knocked, or are swept overboard (MAIB).

Fire: It is up to you to put it out.

Helicopter Rescue: Know what to do and what not to do.

Abandoning the ship: Do you have a liferaft and do you know how to launch, possibly right it, and board it?

Serious injuries: Put in practice first aid training and know how to call for medical help over the radio.

See Module VI for more information on First Aid and Basic Medical Kit.



WEAR A PFD

MAN OVERBOARD

- All persons should wear a suitable personal flotation device (PFD) of 150N or more when working on deck.
- Consider the situation on your vessel, how would you recover a person from the water?
- Perhaps a throw line to reach the casualty and a lifting strop to recover them from the water.
- An overboard ladder or a rope ladder to be able to climb out of the water could be very helpful. On single-handed vessels, the ladder should be permanently in place at the stern, or a lanyard hanging down the side to enable a bulwark mounted rope ladder to be pulled down.

SHOUT-LOOK-POINT-THROW-TURN-SEARCH-RECOVER-TREAT

- Raise a verbal alarm.
- Do not take eyes off MOB. One crew member must be the spotter and be prepared to move around the vessel to keep visual contact.
- Turn the vessel towards the side that the casualty fell over on, this would take the vessel's propeller away from him.
- Throw a lifebuoy, be prepared to activate signal devices, write down the position and send a MAYDAY call to other vessels or Search and Rescue (SAR) authorities.
- Turn your vessel and conduct parallel search. Consider quickest and safest turning manoeuvres (Williamson turn or equivalent).
- Recovery will depend on the sea conditions and whether the man is capable of assisting in the recovery.
- Those assisting the recovery must have PFD and safety harness on. Use a rope with a loop in conjunction with power block or hauler, to take the casualty out of the water.
- Keep casualty horizontal as much as possible to combat hydrostatic squeeze effect.
- Have medical kit and thermal blanket ready to treat the casualty. Be prepared to call the Coastguard for help and have a strategy in place for medical evacuation, either by vessel or helicopter.



CHECK EQUIPMENT IS SERVICEABLE AND READY

FIRE

The fire fighting equipment required by regulation is generally fairly minimal on small vessels. Consider the possible fire situations, the structure and layout of your vessel and decide if additional equipment would be desirable.



HAZARDS AND CONSEQUENCES

- Sparks from electrical switches, motors, tools and leads.
- Fuel leaks on to very hot surfaces.
- Sparks from grinding and welding.
- Cookers, generators, cigarettes, matches and lighters.

MATERIAL ON FIRE	BEST EXTINGUISHER
Cloth/paper/wood	Water
Flammable liquids	Foam
Electrical fires	CO ₂
Most types of fire	Dry powder (*)

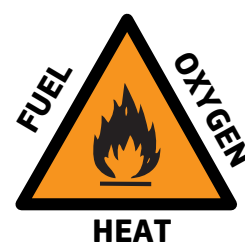
(*) Specialist extinguishers available for fires involving metals and some liquids

WHAT THE CREW NEEDS TO KNOW

- Where all firefighting equipment is held on board.
- How and when to use all the firefighting equipment.
- The effects of firefighting water on vessel stability.
- Individual roles in fighting a fire onboard.

Practice drills should be carried out to make sure everyone is aware.

The removal of one element will extinguish fire



I-6. Triangle of fire



WHAT TO DO IN CASE OF FIRE

- Shout FIRE and sound the alarm.
- Skipper to consider MAYDAY call.
- Try to put out fire using a fire extinguisher.
- Close all ventilation.
- If unsuccessful, get out and close the compartment. If possible, shut off all power and fuel supplies to the compartment.
- Protect liferaft from fire and place lifejackets where they will be safe and accessible.
- Use water sparingly to avoid creating a stability problem (free surface).
- Prepare to abandon the ship.

THINGS THAT GIVE FIRE MORE FUEL TO BURN

- Diesel, petrol fuel and lubricating oils.
- Hydraulic oil.
- LPG gas bottles used for cooking.
- Cleaning chemicals, paints and thinners.
- Rags with oil or chemicals on them.



KNOW WHAT TO DO

IF AN EMERGENCY OCCURS IT IS TOO LATE TO READ THE GUIDE BOOK!

Ensure that all onboard know the procedures, what information to give and how to proceed when involved in a helicopter operation.

INFORMATION TO THE RESCUE HELICOPTER

- Your position, name, vessel registration number.
- Vessel speed, course, forecast in the area.
- Nature of distress.
- Distress equipment (radio, hand held flares).



DURING THE RESCUE OPERATION

- Listen and follow the pilot's orders.
- Vessel's speed must not exceed 5-10 knots.
- Haul your nets and clear the deck if there is enough time to do so.
- Have men ready for the high line wire.
- Do not touch the wire until it earths in the sea, (it is full of static electricity).
- Do not fasten the wire to the vessel.



DEVELOP AN EMERGENCY PLAN

If you do not have a liferaft by regulation, consider buying or hiring one and consider also an Emergency Position Indicating Radio Beacon (EPIRB).



CONTROL MEASURES

- The skipper must give the order to abandon the ship when it is clear that lives are at risk (e.g. fire or flooding);
- If there is time, send a MAYDAY message, collect thermal clothes and blankets;
- Activate the EPIRB and tie it to raft or person;
- Gather flares, hand held radio and launch the liferaft.

7. STABILITY, THE HIDDEN DANGER!



DON'T OVERLOAD

AN ORIGINAL STABLE VESSEL MAY BECOME UNSTABLE

The fishing vessel's stability is constantly changing during its voyage due to changes in: the weather, the vessel's loading and fishing operations.

Stability is not easy to assess and must be assessed by a qualified expert.

Ideally, when the vessel was first commissioned, full stability calculations will have been made and a stability book produced, giving information on the limitations of the vessel in different loading conditions. For small vessels, however, this is unlikely but the designer will have calculated the level of stability of the hull to ensure that it would achieve the desired requirements.



HAZARDS AND CONSEQUENCES

If you have made changes to your vessel such as, modifications, the addition of equipment or you have any concern about your vessel, you should get advice from a qualified person. Also consider if it is necessary to inform the relevant maritime authority and your insurance company.

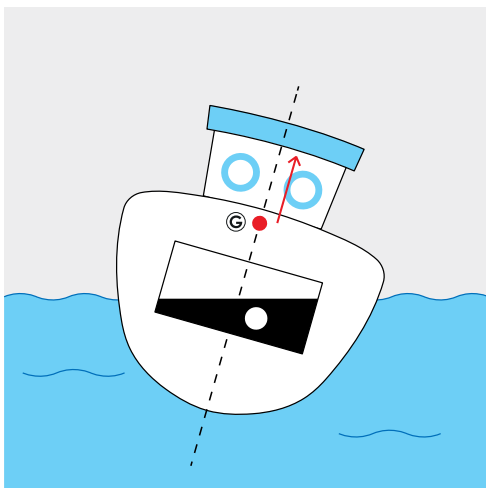


CONTROL MEASURES

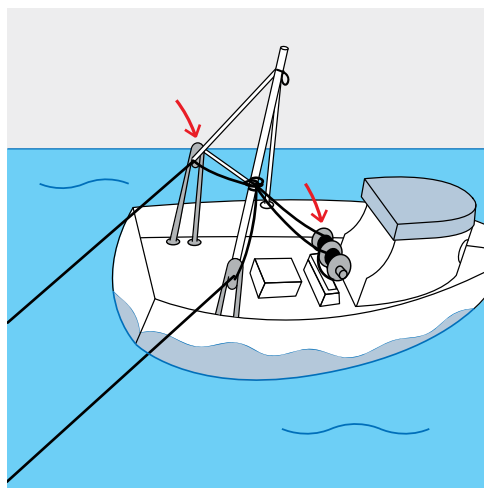
Given that your vessel has achieved a history of safe operation you can continue to operate it safely if you take note of the following points:

- Be very careful about the load you place on the vessel, do not overload it.
- Stow gear below deck whenever possible as weight above deck reduces stability.
- Be careful about the freeboard (the height from the water to the deck level). This reduces as load carried on the vessel increases. Check the freeboard regularly as a means of being aware of changes in the vessel loading. Reduced freeboard results in the edge of the deck going below water level as the vessel rolls and this dramatically reduces the level of buoyancy that the hull provides. Reduced freeboard can also result in down flooding when the vessel heels that much that water can enter hatchways, doorways or vents.
- Keep the vessel loaded evenly and level as being down by the bow or the stern will also reduce the buoyancy provided by the hull.
- Ensure that you have a working bilge level alarm so that you are immediately aware of any excess water in the hull. Free surface effect of the water will reduce stability.
- Keep the deck as clear as possible and ensure that freeing ports are never blocked.
- Fish on the deck should be quickly boxed and stored below. Fish on deck may slide to one side destabilising the vessel.
- Avoid operating the vessel in a 'light' condition with little fuel or stores onboard.
- Take real care when doing lifting operations as the load will act from the top of the lifting block and place a large overturning load on the vessel.
- When dealing with a 'fastener' be very careful and be prepared to 'buoy' the gear off so that the gear can then be recovered in more favourable conditions rather than risk the vessel.
- Do not add or remove any ballast without getting expert advice.

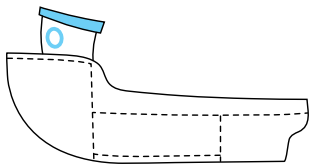
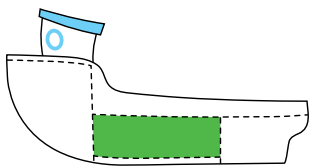
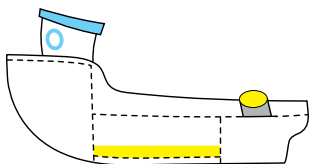
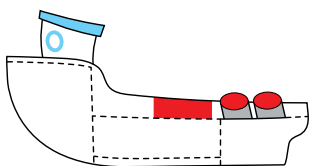
See related incident in Module IV: 12 Stability check (flooding, capsize and deaths).



I-7. Free surface effect in a tank (Adapted from FAO, Paper 517).



I-8. Overturning load from warps (Adapted from FAO, Paper 517).

STABILITY NOTICE				
	PLACEMENT OF GEAR AND CATCH	STABILITY		
		Acceptable	At the limit	Danger of capsize
	• Empty fish hold			
	• Catch in fish hold			
	• Part load in hold • Gear on deck			
	• Considerable catch on deck • Gear on deck • Empty fish hold			

I-9. Stability notice (Adapted from FAO, Paper 517).

SIMPLE STEPS FOR MAINTAINING STABILITY:

- Close doors and hatches
- Ensure that scuppers and freeing ports are open and clear of obstructions to allow water to drain quickly from the deck
- Secure catch and gear against shifting
- Move gear and catch from the deck into the fish hold
- Avoid following seas
- Large heeling moments when hauling gear are to be avoided

Source: FAO Technical paper 517 – Safety practices related to small fishing vessels stability.



PUT IT AWAY

KEEP THE BOAT TIDY AND SAFE — PUT IT AWAY

It should be possible to move easily around the working areas of the vessel without the risk of slips, trips and falls. For safe working, everything needs to be stowed to leave walkways and working areas clear.



HAZARDS AND CONSEQUENCES

- Tripping over obstructions.
- Slipping on ice, fish or oil leaks.
- Unprotected openings.
- Lack of handrails.
- Poor lighting.
- Low head obstructions.



I-3. Untidy deck area (Beate Gminder © European Union).



CONTROL MEASURES

- Keep the deck area clear of spare fishing gear that persons may trip and fall over.
- Apply a non-slip coating to the deck, use raised slotted walk boards (duckboards) in areas with ice and fish guts. Use rubber mats where appropriate. Clean up and repair any oil leaks.
- Keep hatchways closed when not in use.
- Install handrails where they are necessary or where they will be beneficial.
- Ensure that the lighting is good enough to see all hazards.
- Clearly mark any low obstructions and protect any sharp edges with padding.
- Keep clear access to vital safety equipment and controls.
- Ensure that freeing ports and emergency escapes are not blocked.



I-4. Tidy deck area (Beate Gminder © European Union).

9. WATCHKEEPING



LOOKOUT

EFFECTIVE WATCHKEEPING... OR PAY THE PRICE

Ensure that the vessel is controlled safely for all on board, and for the safety of other vessels.



HAZARDS AND CONSEQUENCES

- The watch keeper is not competent.
- Proper lookout is not kept when the skipper is working on deck.
- The watch keeper falls asleep.
- The watch keeper is not paying attention.



CONTROL MEASURES

- Ensure that anyone left in charge of the vessel has the necessary knowledge and experience to be able to competently deal with all possible situations.
- If working on the deck the skipper must have provision to control the vessel and to see what is around.
- Any person left in charge of the vessel must have had adequate rest. A watch alarm system is a good safety measure to guard against the watch keeper falling asleep.
- Distractions such as televisions and video screens should not be visible from the vessel control position.
- A drink should be prepared prior to taking watch. Never leave the wheelhouse to make a drink.

See related incident in Module IV: 5 Too little sleep (running aground).

**KEEP IT CLEAN****A SAFE HEALTHY ENVIRONMENT IS THE LEAST YOU SHOULD EXPECT**

Ensure that the accommodation, galley and all facilities are adequate for the duration of the fishing trip.

**HAZARDS AND CONSEQUENCES**

- Poor heating and ventilation affecting the health of crew members.
- Inadequate cooking/washing facilities resulting in the crew enduring unhygienic conditions.
- Fire fighting provisions are not sufficient.
- Gas bottles stored and used incorrectly.
- Excessive noise levels.
- Escape routes not provided or not usable.

**CONTROL MEASURES**

- The accommodation areas of the vessel should have a comfortable ambient temperature and adequate ventilation to ensure that it is not damp and unhealthy.
- Cooking and washing facilities should be suitable for the duration of the fishing trips and be in good working order and clean.
- Smoke detectors should be installed and suitable fire extinguishers readily available.
- A fire blanket should be adjacent to the stove.
- Gas bottles must be stored outside the accommodation in a well ventilated area.
- A gas detector must be installed in the galley and regularly tested.
- Excessive noise must be reduced by the installation of sound deadening insulation.
- Ensure that there is an escape route out of the accommodation and ensure that it is kept clear at all times and has adequate signs and that all crew members are capable of using it.

**MAINTAIN PROPERLY****DO NOT IGNORE THE ENGINE**

Effective maintenance is essential to ensure reliability. In poor conditions you really need the engine and associated machinery to be totally reliable.

The engine room/space needs to be a safe area to move around as you may have to work on the engine at sea.

**HAZARDS AND CONSEQUENCES**

- Engine/machinery failure.
- Danger of falls and injury.
- Working alone.
- Poor lighting.
- Belt drives.
- Hot surfaces.
- Dirty.
- Fire/explosions.
- Unventilated batteries.
- Flooding from failed pipes, pumps and valves.

**CONTROL MEASURES**

- Implement preventative maintenance, including regular oil and filter changes.
- Check all belt drives.
- Ensure that handrails or grab rails are where they are needed and all floor plates are in place to enable safe movement and working around the engine.
- If working alone in the engine room, inform someone how long you expect to be.
- Ensure that the lighting is good and in positions where you need it to be able to maintain the engine.
- Ensure all belt drives are properly guarded, even those beneath the floor plates, as having lifted the floor plate up to gain access, protection will be needed from the belt drive.
- Fit a guard on any hot surfaces that you are likely to accidentally touch.
- Ensure good ventilation to remove heat and fumes.
- Maintain the engine and associated equipment in a clean condition to enable you to see leaks of water, fuel and oil before they become a bigger problem.
- Consider the fire extinguishing system, is it adequate and if a fixed system is installed are all persons aware of the dangers of inert gas?
- Ensure that batteries are ventilated to outside and make sure that the batteries are clear of any items that may short across them causing fire or explosion.
- Check on the condition of sea water systems, install an effective bilge level alarm and check regularly that it is working.
- Make sure sea inlet valves can be easily closed, even if under water.



DO IT SAFELY

AROUND 20% OF FISHERMEN FATALITIES OCCUR IN HARBOUR WHEN BOARDING OR LEAVING THE VESSEL

Alcohol is considered to be a possible factor in many instances but the arrangements for the boarding of small vessels are often quite dangerous.



HAZARDS AND CONSEQUENCES

- Climbing down a ladder.
- Obstructions on quay side and on vessels.
- Poor lighting.
- Unprotected openings.
- Access across other vessels.
- Boarding via a dinghy.



I-5. Good access via pontoon (Amélie Knapp © European Union).



CONTROL MEASURES

- Do not consume alcohol or drugs and attempt to board the vessel.
- Always try to board when other people are around.
- Harbour wall ladders are the responsibility of the Harbour Authority and if the ladders are not in good condition (e.g. with hand holds at the top) complaints should be made to the Authority.
- Avoid using any ladders in poor condition.
- Obstructions such as netting, rope, wires, boxes, trawl doors, rubbish, etc. both on the quay side and on the vessel can result in trips and falls. Remove any unnecessary obstructions from your vessel and cooperate with the Harbour Authority in keeping the areas adjacent to ladders clear.
- Harbour lighting may be poor or non-existent. Requests should be made to the Harbour Authority to improve it but, in the mean time, a torch should be used to ensure that trip dangers are seen.
- Open hatchways that a person could trip and fall down must be guarded. Similarly, temporary openings such as when maintenance work is being carried out must be guarded.
- Access across vessels: It is usual for vessels to moor alongside each other and crew members, repairers and others will need to be able to cross vessels safely. Ensure that your vessel is safe to cross; the deck is not slippery, handrails are in place and secure and there is an obstruction free route.
- When boarding via a dinghy it can easily be overwhelmed especially if loaded with stores and equipment for a fishing trip.
- Suitable flotation devices must be worn by all persons and the dinghy must not be overloaded.
- Oars/paddles must be carried in case the engine fails and a light should be available to avoid being run down by another vessel in the dark.

13. PLANNING THE FISHING TRIP



MAKE SURE

FAIL TO PREPARE, PREPARE TO FAIL!

Proper planning, preparation and checks before the fishing trip will ensure that you can go fishing with confidence in your vessel.



HAZARDS AND CONSEQUENCES

- Machinery breakdown.
- Tools and spares not available.
- Vessel flooding and loss.
- Safety equipment not effective.
- Crew not aware of safety procedures.
- Severe weather conditions.
- Radio communication failure.
- Crew not competent or fit.



CONTROL MEASURES

Prepare a checklist for your vessel with all the items you consider important, but ensure that you include the following:

- **Engine:** fuel, oil, fresh water.
 - Check for any leaks and signs of developing problems.
 - Check engine alarms.
- **Bilge level alarm:**
 - Check it is working.
- **Sea water systems:**
 - Check for signs of problems. Can the sea inlet be easily closed?
- Are pumps in good working order?
 - Check that suction strainers are clear.
- **Hydraulics:**
 - Check for leaks — but not with your hand as hydraulic fluid can be injected into the tissue with very serious consequences and check reservoir level.
 - Have you spare oil?
- **Vessel condition:**
 - Is everything correctly stowed, hatches closed and the freeing ports are clear?
- **Safety equipment:**
 - Lifejackets readily available; liferaft with correctly mounted hydrostatic release is in position.
 - Are all fire provisions in place and correct?
 - All crew members aware of safety procedures.
 - Navigation systems working and back up available?
- **Weather:**
 - Check weather forecast for the duration of your expected trip.
 - Inform shore based persons of your intended fishing area and your anticipated date and time of return to port.
 - Give contact details of all persons on board.
- **Communications check:**
 - Test radio with the harbour office or another vessel.

**TAKE CARE****THINK BEFORE YOU ACT, YOU CAN REPLACE FISHING GEAR BUT NOT A LIFE**

When things go wrong and the gear becomes fouled, fishermen want to clear it quickly and may not think about possible consequences when reaching out over the rail or standing on the trawl repairing the netting.

**HAZARDS AND CONSEQUENCES**

- Falling over board.
- Falling from a height.
- Being dragged over board by the gear pulling back out.
- Struck by items swinging, rolling or sliding.
- Injured crew because they were not wearing appropriate gloves, safety goggles, head protection etc.
- Vessel capsizes.

**CONTROL MEASURES**

- Firstly, assess the situation and decide on the best way to resolve it. Tell all involved what you intend to do.
- Wear a safety harness if leaning outboard to reach or you are going to step up from the deck.
- Ensure that the gear cannot pull back out before working on it.
- Ensure that items cannot swing, roll or slide injuring someone.
- Have a tool kit readily available with the right tools and equipment for the repairs you can expect.
- Ensure that the correct safety equipment is available with the tools and is used.



I-6. Make repairs in a safe place (Dominique Levieil © European Union).

15. MAINTENANCE WORK



WEAR PROTECTIVE EQUIPMENT

KEEP IT SAFE!

Many fishermen will do as much of their own maintenance work as possible to keep the costs down. Reducing maintenance to save costs will never offset the personal and financial costs involved if someone is injured; it is essential that effective maintenance is completed to keep the vessel safe and operational.



HAZARDS AND CONSEQUENCES

- All the risks associated with chipping, grinding, wire brushing and similar work.
- The dangers of using electrical tools in a marine environment.
- Dangers of falls.
- Chemicals used for cleaning or treatments.
- Fumes.
- Enclosed spaces.
- Lifting operations.



CONTROL MEASURES

- Personal Protective Equipment must be worn where there is a danger of falling overboard.
- Gloves for hands, goggles for eyes, and suitable masks for dust.
- Safety boots need to be worn to protect the toes and hard hats where there is any danger of items falling from above or hitting one's head on obstructions.
- Electrical tools must only be used if they are in safe condition with effective controls, guards and other safety features correctly in place. Safety circuit breakers must be used to give protection and extension cables must be in good condition.
- If working at height or over the side of the vessel a safety harness should be worn.
- Read carefully and follow all safety precautions supplied with chemicals and other materials. This information is provided on the product label and on a Safety Data Sheet which must be provided with all chemicals.
- Be aware of the danger of fumes from paints and adhesives. Ensure good ventilation and wear suitable respirators.
- Take fire precautions when welding or burning operations are taking place.
- Be aware of the dangers of enclosed spaces. Even painting out the accommodation can result in a dangerous atmosphere. Ensure good ventilation and wear respirators. Wait a sufficient time after painting for thorough ventilation of fumes before allowing free access. In spaces that have held fuel or oil do not enter until checks have been made that it is free of explosive gas and has a safe atmosphere. Do not enter any space that has been sealed without first checking that it is safe.
- Assess the weight of items being lifted and use suitable certified slings.
- Ensure that the structure of the vessel is strong enough before attaching lifting equipment to it.

See Module VI, section 4 Work equipment.



AVOID SEVERE WEATHER

TAKE CAREFUL NOTE OF THE WEATHER

Working from the beach can be particularly dangerous as the weather may change and when you return it may be very difficult to get the vessel safely on to the beach. Wading in the sea to couple the vessel up to a winch or tractor requires suitable clothing and a personal flotation device.



HAZARDS AND CONSEQUENCES

- Getting wet and cold.
- Being knocked down by the vessel.
- Drowning.
- Vessel broaches in waves, then capsizes.
- Injuries from manually carrying everything to and from the vessel.



I-7. Beach operations (DG MARE © European Union).



CONTROL MEASURES

- Wear thigh high waders and suitable clothing.
- In cold conditions a buoyant thermal suit may be suitable.
- Wear a personal flotation device.
- In bad conditions use a lifeline to someone ashore.
- Have a length of chain or rope that the winch wire can be hooked into in order to avoid having to stand directly under the bow of the vessel.
- Check weather forecasts before sailing and keep in radio contact to be aware of local conditions.
- If possible have an alternative landing or sheltering place.
- Carry sufficient fuel to be able to go to an alternative landing.
- Consider arrangements for carrying stores and fish to and from the vessel.



I-8. Tractors used to launch vessels (Jonas Zetterberg © European Union).

DON'T GET DISTRACTED

TAKE CARE, DON'T BE DISTRACTED

Landing the catch is a very repetitive operation with possible distractions from people on the quayside making it easy to lose concentration and have an accident.



HAZARDS AND CONSEQUENCES

- The landing equipment is not in good condition and strong enough for the load.
- The winch whipping drum is used for lifting.
- The winch operator cannot see the crew members in the fish room.
- Injuries from being struck by swinging boxes or the box hooks.
- Danger from boxes falling back down the fishroom.
- Danger from forklift trucks on the quayside hitting a crew member.
- Public safety.



CONTROL MEASURES

- Ensure that the landing equipment is in good order and is suitable for the load being lifted. In some countries legislation is in place requiring that the lifting equipment is tested and certified (see Module VI of this guide).
- If a whipping drum is used for landing, great care must be taken by the operator to avoid a riding turn, or their clothing trapped in the rope, pulling them into the drum. A dedicated landing winch is much safer.
- A dedicated winch can have the control position such that the operator can see the crew in the fish room and ensure that they are clear.
- Hard hats should be worn to reduce the risk of serious injury as a result of being struck by the swinging box hooks, fish boxes or should boxes fall back down in to the fish room.
- Warn crew members to be aware of the dangers from forklifts and other traffic on the quayside.
- Ensure your landing operation does not endanger members of the public by erecting barriers and notices if appropriate to keep them clear of the area.
- Always use the allocated landing berth, when provided.



I-9. Landing the catch (Anja Detant © European Union).

**GET AN EPIRB****YOU WILL HAVE TO RELY ON YOURSELF – DON'T LET YOURSELF DOWN!**

Many small vessels are now being operated by one person and this has obvious safety concerns in the event of an accident. Single handed operations are not recommended but if unavoidable, take safety precautions.

**HAZARDS AND CONSEQUENCES**

- Injured in an accident, no help available.
- Falling overboard and the vessel keeps going.
- Falling overboard, no one to call rescue services.
- Sudden vessel loss, no one aware.



I-10. Single-handed vessel (Manuel Carmona Yebra © European Union).



CONTROL MEASURES

PERSONAL FLOTATION DEVICE

Always wear your PFD and ensure that it has sufficient buoyancy to turn you on your back keeping your mouth clear of the water even if you become unconscious. Buoyant waistcoats or work vests will not be acceptable as they have limited buoyancy. A 150N automatic inflatable lifejacket, either as a separate item, or integral with your oilskins is recommended. Regularly check that the PFD has not been damaged and that the gas cylinder is secure. Inflatable lifejackets are available with a safety harness incorporated and this will allow you to quickly clip in a safety line.

SAFETY LINE

Wear a safety line perhaps attached with a sliding ring to an overhead wire running the length of the deck. If it can be arranged that the overhead wire connects to an engine cut out such that a high load on the wire stops the engine that will be ideal.

OVERBOARD LADDER

A fixed ladder at the stern or a rope ladder that can be pulled down from the bulwark by a lanyard will enable you to get back on board if you do fall overboard.

EPIRB AND PERSONAL LOCATOR BEACON (PLB)

Equipping your vessel with an emergency position indicating radio beacon (EPIRB) will ensure that should the vessel capsize or sink an automatic distress call will be made and the location transmitted. A personal locator beacon that you can wear on your person will assist search and rescue to locate you in the water.

MAKE SURE THAT YOUR EPIRB OR PLB IS REGISTERED.

CONTROLS

Have additional vessel controls in a position where you can properly control the vessel from the deck. Ensure that you can easily reach the controls for the winch/ hauler and consider if an additional emergency stop would be desirable.

SAFETY EQUIPMENT

Make sure that all safety equipment is in good order and easily accessible.

WORKING AREA

Keep your working area clear of anything that may cause you to trip or fall.

KNIFE

Carry a knife that you can easily reach to cut yourself free if necessary.

WEATHER

Check weather forecasts before leaving and check on a regular basis throughout the trip.

RADIO COMMUNICATIONS

- Test your radio before leaving harbour and inform the local coastal radio station of your intentions: where you will be fishing and your anticipated time of return to harbour.
- Maintain regular communication with the coastal radio station and local vessels during your trip.
- Always tell someone ashore where you are going and when you will be back.

MAINTENANCE

Maintain the vessel well, you cannot afford breakdowns. Your life depends on it!

RISK ASSESSMENT

Think carefully about your vessel and look for ways to make it safer.

See incident in Module IV: 14 Fishing alone.

Module II • The crew

1. ALL ARE RESPONSIBLE FOR SAFETY
2. TRAINING
3. CONCERNS AND COMPETENCES
 - 3.1. YOUNG PERSONS
 - 3.2. LANGUAGE AND CULTURAL ISSUES
4. PERSONAL PROTECTIVE EQUIPMENT
5. PERSONAL FLOTATION DEVICES
6. NOISE
7. SUN PROTECTION AND DEHYDRATION
8. COLD CONDITIONS
9. HEALTH MATTERS
10. STRESS AND FATIGUE
11. MUSCULOSKELETAL DISORDERS
12. SLIPS, TRIPS, FALLS...
13. CATCH HANDLING
14. CATCH PROCESSING
15. CHEMICAL AND BIOLOGICAL HAZARDS
16. MEDICAL EXAMINATION
17. NOTIFICATION OF INJURIES AND DISEASES



**MAKE
THIS
SAFER**

1. ALL ARE RESPONSIBLE FOR SAFETY



TOWARDS A SAFER CULTURE

CHANGING OUR ATTITUDE TO DANGER

The crew may be just one person working 'single handed' or there may be five or six crew members. Whether it is one or several persons, it is essential that they have the knowledge and experience to perform their work safely, both for their own safety and the safety of others and indeed, other vessels. Fishing is the most dangerous industry and the fatality rate is over 30 times more than the normal working population. Fishermen need to change their attitude of 'It has always been dangerous' to one of 'I can make this safer'.



HAZARDS AND CONSEQUENCES

- Drowning through falling overboard when reaching outboard, or being dragged by the fishing gear, or being swept overboard by a large wave.
- Drowning when boarding the vessel.
- Overloading or pulling the vessel over whilst trying to free gear that is fast on the seabed.
- Drowning when the vessel was overwhelmed.
- Killed or injured by machinery or fishing gear.
- Slips, trips and falls.
- Back injuries from manual handling.
- Injuries/diseases from handling fish.
- Hearing damage due to exposure to high noise levels.



CONTROL MEASURES

- The wearing of a suitable personal flotation device when working on deck.
- Training courses in:
 - Sea Survival
 - Fire Fighting
 - First Aid
 - Health and Safety Awareness
 - Manual Handling
- Changing attitudes to the dangers of fishing by not accepting danger but by positively making efforts to combat it.



DO REFRESHER TRAINING

‘THE TRAINING I WAS GIVEN ON THE COURSE SAVED MY LIFE’

Training courses are available in most countries and it is highly recommended that fishermen complete courses as listed below. These courses are practical and well worth attending as they will equip you with the knowledge to work safely and to cope with emergencies.

THE COURSES

Sea Survival

This course is essential for every fisherman.

It should be taken before you even set foot on a boat as this course is all about your survival.

It is a practical course with time spent in the water (usually a swimming pool) getting real experience of wearing a lifejacket and the difficulties of boarding a liferaft.

You will be taught how to right the liferaft if it inflates upside down, and what you should do once in the liferaft.

The dangers of hypothermia and cold shock are discussed and what you should do in a man-over-board situation.

Firefighting

A fire at sea is up to you to put it out! You need to know how.

The course explains fire; the essential elements of: fuel, heat and air and how to use this to combat the fire.

What to do when discovering a fire, isolation of the fire, actions for engine room fires and the use of fire extinguishers and the different types.

Fire prevention is discussed and practical experience is gained in the effective use of fire extinguishers to fight a variety of fires.

First Aid

Basic training to enable you to take the correct action when someone is hurt or becomes ill at sea.

It covers the first aid kit, how to call for assistance over the radio, essential checks with an unconscious casualty and how to perform cardio-pulmonary resuscitation (CPR).

Health and Safety Awareness

The course discusses incidents in fishing, how the unexpected occurred, and what was done to cope with the situation.

It informs you about stability, the loading of your vessel and the free surface effect of water and fish on the deck.

The importance of bilge level alarms to warn of flooding and how to carry out risk assessment.

3. CONCERNS AND COMPETENCES



MAKE THIS SAFER

'A FISHING BOAT IS NO PLACE FOR PEOPLE WHO DO NOT KNOW WHAT THEY ARE DOING'

People have different abilities and experience and it is important that this is taken into account for the operation of the vessel.



HAZARDS AND CONSEQUENCES



II-1. Operations on a fishing boat (Saba Nordstrom © European Union).

- Young person with little experience.
- Young or old person with limited physical strength.
- Anyone not familiar with the vessel or the fishing method.
- Person with a disability.
- Language barriers.
- Fatigue.



CONTROL MEASURES

- Most legislation allows persons below the age of 18 to work, however it is not advisable in fishing. An assessment must be made for younger persons in order to identify which safety provisions are necessary for them.
- Similarly an assessment should be made for anyone with a disability to determine any needs or limitations they may have. Disabilities such as: poor hearing, limited use of a limb.
- Language barriers may not be a problem in the normal routine of fishing but in an emergency situation they could be life threatening.
- Emergency drills must be carried out to instruct crew members about their responsibilities.
- Be sure that everyone gets adequate rest.
- Competence may be achieved in various ways:
 - On the job training working with and being overseen by experienced and knowledgeable persons.
 - Training given in schools, colleges and associations.



SUPERVISE THEM

TAKE RESPONSIBILITY FOR THE YOUNGSTER'S SAFETY

Fishing is often a family business and sons and sometimes daughters will follow their father into fishing. A young person taking a 'pleasure trip' in the school holidays, with his/her father (as the skipper) is acceptable if all the necessary safety precautions are taken. These include supervision of the young person and ensuring that he/she is wearing a suitable PFD at all times when on the open deck or when necessary. Nevertheless, in situations where young persons are working on the vessel then special consideration needs to be given.

KEY POINTS TO CONSIDER

The employment of a young person does raise various factors that have to be met. Importantly, you must check into your national legislation on the employment of young persons as various rules may apply in different countries.

The important steps that you must take are:

- Provide sea survival training before the young person goes to sea.
- Carry out an assessment of the possible risks to the young person before they go to sea. In this assessment you must take into consideration the possible lack of knowledge, experience, physical and psychological strength of the young person.
- Ensure that the young person is properly equipped for the work you expect them to carry out.
- Ensure that they receive suitable training and are supervised effectively.
- Ensure that the young person receives adequate rest.
- Do not allow the young person to carry out tasks that only a fully experienced person should do.

TOLERANCE

PATIENCE AND UNDERSTANDING FROM EVERYONE

Migrant workers are employed as crew members on fishing vessels in many European countries because vessel operators find it difficult to find local nationals who are prepared to carry out the arduous work of fishing.

The employment of migrant workers benefits the vessel operator as generally they are only paid a fixed rate and not a share of the catch as a local national would expect. The migrant crew members will probably live on the vessel and hence there will be no lodging costs involved. The migrant workers benefit by receiving a much bigger wage than they could expect in their home country. In general, the migrant crew members are viewed as being hard-working, good fishermen but problems can exist with language and cultural issues.

SOCIOLOGICAL FACTORS

Language

Fishing is often a repetitive routine of shooting and hauling the fishing gear, gutting and stowing fish. Even though a migrant person may have little knowledge of the national language, work can be effectively achieved. Problems arise when things go wrong and especially, in emergency situations when the inability to communicate can cost lives.

It is very important that posters/signs are displayed in order to provide basic procedures in emergency situations such as man overboard, fire and abandon ship. The best way to learn is by doing and hence, carry out drills to satisfy that all involved do know what they are doing. Consider the possible things that can occur when working the fishing gear. Advise and demonstrate the migrant worker about what can be done in case of hazardous situations.

Cultural Issues

People in all countries tend to assume that, 'everyone thinks like we do' but in reality cultural differences mean that different views may be taken thus causing misunderstandings.

Body Language: Body language can be interpreted differently in different countries. Many people will signal 'no' by shaking their heads but people from some countries raise their chins. Eye contact is considered important and some cultures like to make 'eye contact' and if it does not happen it is a sign of evasiveness. However in some Latin and Asian countries, averted eyes are a sign of respect.

Similarly, people from some cultures do not feel happy shaking hands. In conversations people tend to assume a 'personal space' and will keep a distance from the other person. Although other cultures may be different from yours, what really matters is to show respect for diversity and learn to work cooperatively towards common goals.



II-1. Hello in several languages.

KEY POINTS TO CONSIDER

A successful vessel relies on teamwork and any new crew member needs to fit into the team. Vessel operators considering employing migrant workers should note the following points:

- Establish their ability to communicate in the national language before recruiting the person.
- Check on training and experience. Has the person received sea survival training? If not you will need to ensure that they receive sea survival training before going to sea.
- Ensure that they are fully equipped with suitable sea gear and personal protective equipment (gloves, safety boots, etc. as appropriate). Importantly, ensure that they have a personal flotation device (PFD) that is suitable for the purpose, in good condition and that fits them correctly.
- Give them a full safety induction and carryout drills to make sure that they understand the emergency procedures.
- Allow time for them to become accustomed to the work of handling the fishing gear and have an experienced person work with them if possible until you are satisfied that they are safe both for themselves and others.
- Carry out an assessment of their capabilities and any risk they pose to themselves and others. If this assessment requires actions such as further training, language tuition, etc. arrange such training without delay.

A fishing vessel is a close, isolated world and how the crew react to each other is critical as they are in such close contact. It is important that all persons attempt to understand and make allowances for each other.

4. PERSONAL PROTECTIVE EQUIPMENT



PPE IS COMMON SENSE

HAVE THE RIGHT 'SEA GEAR' AND THE APPROPRIATE PROTECTIVE EQUIPMENT

Crewmembers need to be equipped with clothing suitable for the conditions and to be provided with personal protective equipment (PPE) according to the risks and the parts of the body exposed to the risks.



HAZARDS AND CONSEQUENCES

Protection from:

- Sea spray and water from the fishing gear;
- Cold and heat.

Protection for:

- Hands, feet, head, eyes, indeed the whole body.



CONTROL MEASURES EQUIPMENT INCLUDES

- Oilskin clothing is essential to keep dry, as even in calm conditions water drips off the fishing gear.
- In very cold conditions buoyant thermal suits are ideal and will keep the wearer afloat and will combat both cold water shock and hypothermia if they should end up in the sea.
- Rubber boots are normal for fishermen and these should incorporate steel toe caps to protect the toes if items are dropped.
- Waterproof gloves need to be worn for handling fish and fishing gear. Tough leather gloves are needed for wire splicing and similar operations.
- Hard hats are to be worn if there is a risk of being struck on the head.
- Goggles or visors to be worn, if there is a risk of injury to the eyes.

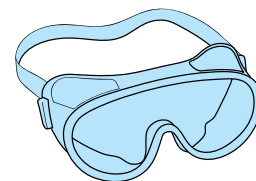


HARD HAT

SAFETY
BOOTS



EAR PROTECTOR



GOGGLES

II-2. Basic personal protective equipment.



IT'S YOUR LIFE!

STAY AFLOAT LONG ENOUGH TO BE RESCUED

According to MAIB data (1992-2006), on small fishing vessels the three biggest causes of death are: Capsize (29%), person overboard (28%), and flooding/foundering (23%).

In all cases fishermen drowned and yet, if suitable personal flotation devices had been worn, many of the lives could have been saved.



HAZARDS AND CONSEQUENCES

There are many ways that a person can end up in the sea:

- falling overboard while reaching out board;
- slipping or tripping and falling overboard;
- being knocked or thrown by wires/ropes coming tight;
- being dragged overboard by the fishing gear;
- the vessel capsizing or foundering;
- being swept overboard by the sea.

Without some means of buoyancy to give support the person rapidly becomes too cold and tired and will drown.



CONTROL MEASURES

In some countries legislation requires that:

- On small vessels, less than 15 metres overall length, all persons must wear a personal flotation device when on deck.
- Regardless of whether it is required by your national legislation, the wearing of a suitable PFD is the single most effective measure that you can take to improve your safety.
- Studies have shown that the wearing of a PFD will increase the chance of survival when falling overboard.
- With regard to the selection and maintenance of PFDs please see Module VI.

See incident in Module IV: 3 Man overboard (drowning).



II-2. Automatic lifejacket (Jari Leskinen © European Union).

PROTECT YOUR EARS

VALUE YOUR HEARING – USE EAR DEFENDERS

Noise is a pollutant that affects the physiological or psychological wellbeing of people. Regular exposure to noise levels above 80 dB(A) causes hearing loss.

This may take a long time to become apparent, perhaps not until you are retired, but deafness will be permanent.

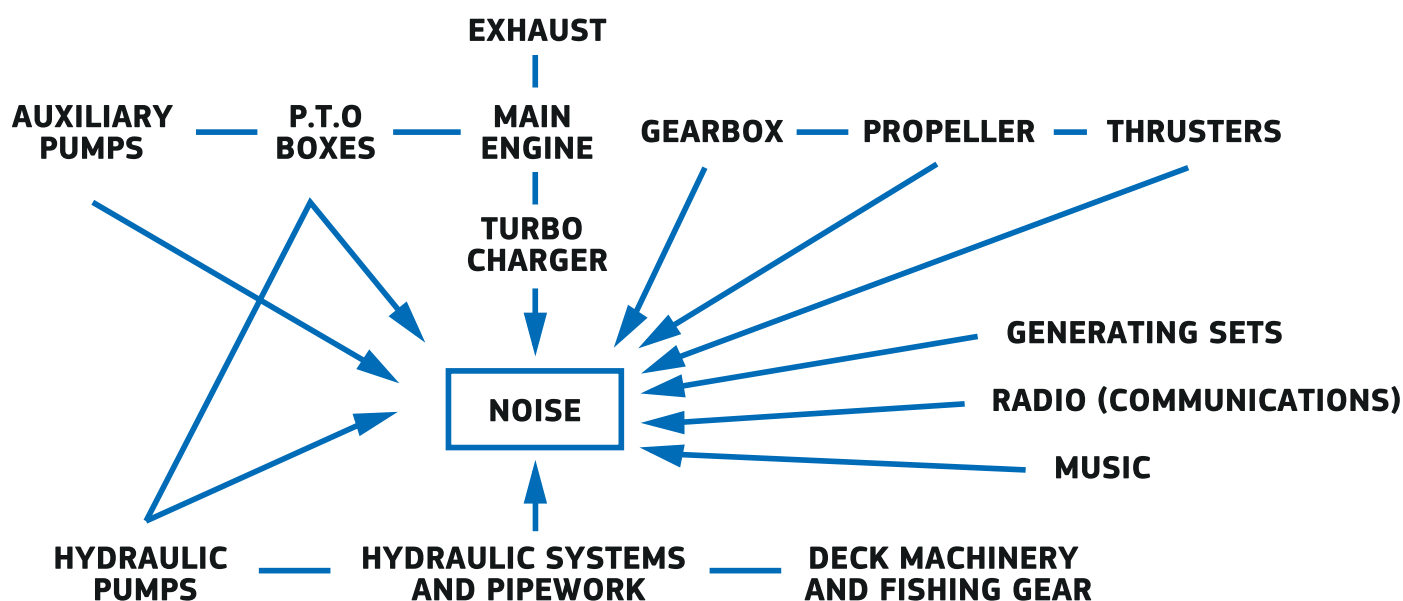
If you have to shout to be heard by someone two metres away or you have ringing in your ears after work, there is a noise problem.

High levels of noise, such as those in the engine room (above 110 dB(A)) produce hearing damage after only minutes of exposure (see figures below).

HAZARDS AND CONSEQUENCES

- If noise levels in your vessel exceed 80 dB(A), crew members are at risk.
- Periods of exposure to noise levels are accumulative and may result in permanent hearing damage in the long term.
- The most common and extremely serious consequence is the irreversible loss of hearing or being affected by noise induced tinnitus (pain or ringing in your ears).
- Crewmembers who suffer from deafness may not fully understand verbal instructions.

II-3. NOISY EQUIPMENT ON VESSELS (Seafish, UK)



Source: Noise and fishing vessels, adapted from Seafish, 1988.

II-4. WHAT ARE HAZARDOUS NOISE LEVELS?

Painful trauma
Shotgun blast

140

Extremely loud
Car horn

110

Very loud
Vacuum cleaner

80

Loud
Alarm clock

80

Moderate
Rainfall

50

Faint
Refrigerator

40

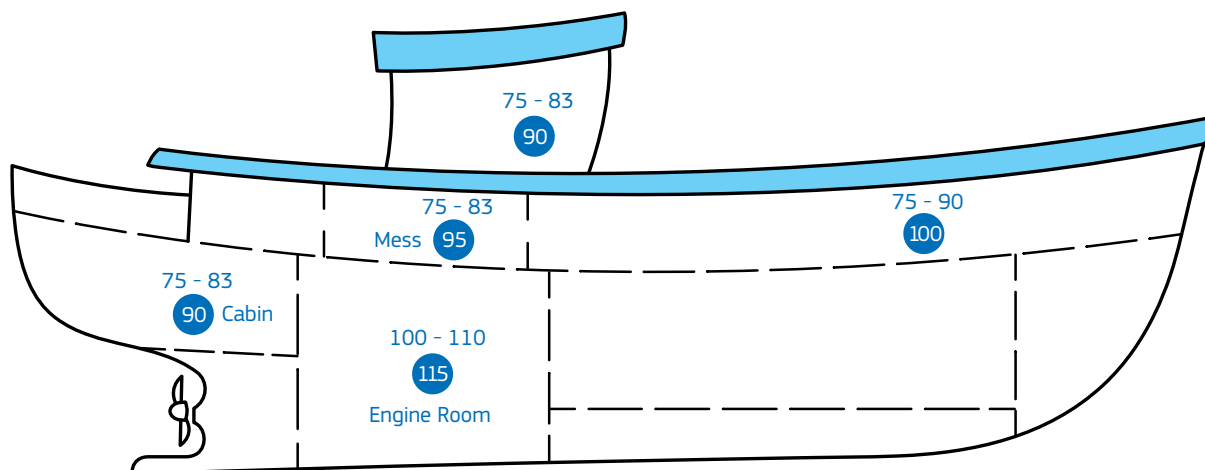
dB(A) levels



Maximum exposure time in 24 hours

110 dB(A), 1 minute
105 dB(A), 5 minutes
100 dB(A), 15 minutes
95 dB(A), 50 minutes
90 dB(A), 2 hours
85 dB(A), 8 hours
82 dB(A), 16 hours

II-5. TYPICAL NOISE LEVELS IN AREAS OF A VESSEL (SEAFISH)



Circled figures are the highest levels measured in 17 fishing vessels, adapted from Seafish, 1988.



CONTROL MEASURES

- Assess the situation on your vessel; in the wheelhouse, accommodation and working areas.
- If noise levels are high (above 80 dB(A)), consider simple solutions such as claddings, enclosures, replacement insulation and ear defenders.
- In most engine rooms noise level exceed 110 dB(A), therefore it is essential to wear ear defenders.
- Consider potential noise problems during the design of the vessel when solutions are less expensive.
- Boat builders, marine surveyors and equipment suppliers can offer you proper advice.
- Signs must be displayed in areas where noise levels exceed 85 dB(A).

7. SUN PROTECTION AND DEHYDRATION

PREVENT SKIN CANCER

DON'T GET BURNT

Working on deck for many hours can expose you to high ultraviolet (UV) radiation from the sun causing skin damage, blistering, skin ageing and in the long term can lead to skin cancer. During hot seasons, fishermen must also take special provisions to prevent dehydration.

HAZARDS AND CONSEQUENCES



II-3. Unprotected skin (Goran Kumric © European Union).

- Persons of Caucasian origin are most at risk.
- Fair freckled skin that does not tan, or burns before it tans.
- Persons with a large number of moles.
- Persons with red or fair hair.
- Persons with light coloured eyes.
- All persons can suffer dehydration in hot conditions.

CONTROL MEASURES

- Cover up is the best protection.
- Wear a hat that gives shade for your face and neck.
- Sunscreens will give protection but only if applied liberally and are of sufficient strength (SPF).
- Check your skin, the first warning sign is often a small scabby spot which does not clear up after a few weeks.
- Look for changes or newly formed moles especially around your nose and eyes or the backs of your hands. Particular attention should be paid to moles that grow or change appearance.
- Consult a doctor if these signs appear.
- All persons should drink plenty of water in hot conditions and in really hot conditions, salt tablets should be taken.



II-4. Protected from cold, sun and drowning (Laurent Markovic © European Union).

8. COLD CONDITIONS



MAKE THIS SAFER

EXTREME COLD CONDITIONS NEED EXTRA PRECAUTIONS

Working in very cold conditions brings special problems and suitable clothing is necessary. Keeping warm will depend on the temperature, wind strength, the sea temperature and humidity. Cold conditions can rapidly reduce your capability to work.



HAZARDS AND CONSEQUENCES

- Wet clothing.
- Contact with cold metal.
- Wind chill.
- High humidity.
- Alcohol.
- Lack of nutrition.
- Frostbite (nose, ears, cheeks, fingers, toes).
- Hypothermia.



CONTROL MEASURES

- Wear suitable clothing, with many layers — clothes should be loose and the external layer should be wind and water resistant.
- Buoyant thermal suits are ideal.
- Wear head covering, a hat with ear flaps that covers as much of the face as possible.
- Protect your hands and feet.
- Wear mitts in preference to gloves with fingers — always have a spare pair to change if they become wet.
- Work at a sensible rate, to prevent unnecessary sweating.
- Try to take frequent breaks in a heated area, remove your outer clothing.
- Drink lots of warm drinks, but not caffeine or alcohol.
- Use a barrier cream of suitable quality to protect your face.
- Ensure that metal handles and grips are insulated.

TREATMENT FOR PERSONS INJURED BY COLD

- Transfer to a warm (not hot) dry room, take off wet and cold clothing and wrap in a blanket.
- If fingers are frost bitten dip them in lukewarm water.
- For nose, cheeks and ears, wrap in clean bandages.
- Give warm drinks (not hot).
- Blisters should not be punctured, do not massage frozen skin parts.
- Injuries should be examined by a doctor.
- Do not give alcohol.
- Keep in a lying down position when transporting.



LOOK AFTER YOURSELF

MAINTAIN YOURSELF AS WELL AS THE BOAT – DON'T GET SCRAPPED!

Fishing is hard demanding work and you have to be fit to be able to do it. Over the years the work will take its toll on you and you need to appreciate the demands on yourself and take care.



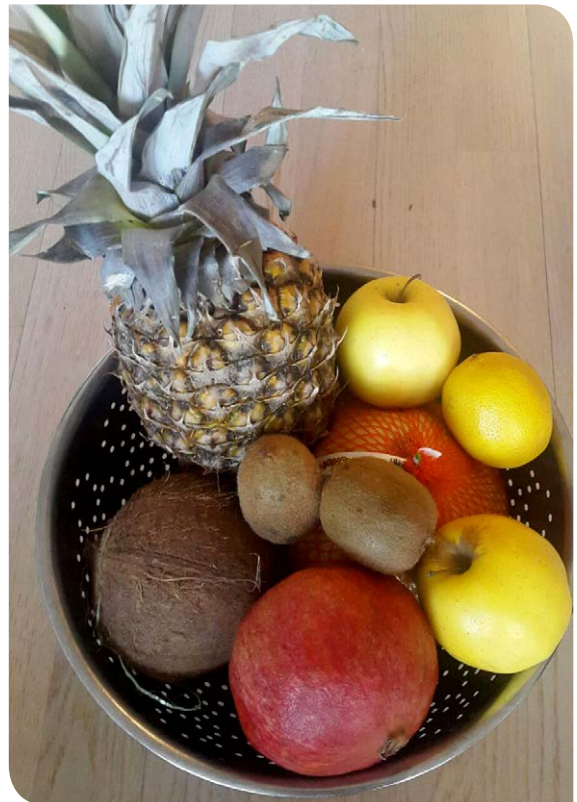
HAZARDS AND CONSEQUENCES

- Excessively, eating the wrong foods (living out of the frying pan).
- Overeating.
- Smoking.
- High blood pressure.
- Alcohol and drugs.



CONTROL MEASURES

- Eat sensibly and ensure that you have plenty of vegetables and fruit.
- Regularly check your weight and reduce the amount you eat if necessary, don't allow an overweight problem to develop.
- Quit smoking you'll live longer, feel fitter and will save money!
- Have a regular health check with your doctor to be aware of problems such as high blood pressure developing and to ensure that any problem is detected, diagnosed and treated early.
- Few fishermen would think of drinking alcohol at sea but there may be a need to be modest in the quantity drunk at home.
- Do not use drugs!



II-5. Eat healthy (Hélène Guillut).



HAVE BREAKS

FATIGUE IS A HEALTH RISK AND ACCIDENT RISK!

Fatigue increases the risk of personal injury for those working on the deck and fatigue is a major cause of accidents and navigation errors.



HAZARDS AND CONSEQUENCES

Fatigue is the result of:

- Time pressure;
- Excessive stress;
- Work overload and understaffing;
- Less than six hours sleep without being woken up;
- Less than six hours of good quality sleep due to the watch schemes and engine noise;
- Prolonged mental or physical work extended around the clock for many days;
- Insufficient break time between shifts;
- Inadequate rest.



CONTROL MEASURES

- Be aware of the effects of fatigue on you and your crew, and ensure that adequate rest is taken.
- The consequences of fatigue could be much worse than lost fishing time!
- Music has a healing effect on fatigue.



LISTEN TO YOUR BODY

TAKE CARE OF YOUR BACK NECK, ARMS, LEGS AND KNEES

After hearing loss, lower back disorder has been reported as a major occupational disease in fishing. Knee and neck pain, as well as problems with the legs and arms are also common in fishing.

The consequences can be long term pain, reduced ability to do daily activities and the fisherman may have to leave the job.

A number of working positions or actions, when repeated throughout the day and accumulated over the years, may affect your bones and muscles.



HAZARDS AND CONSEQUENCES



II-6. Good manual handling equipment (Dominique Leveil © European Union).

- Repeated handling of heavy loads, or bent back working positions, generates back pains.
- Sorting the catch in a kneeled position affects your knees, bending the back affects your spine.
- Repeatedly removing the fish from the meshes or hooks, or baiting lines, may generate pains in the hand muscles or tendons.
- Standing for hours at the wheel, standing on vibrating floors can generate blood circulation problems.



CONTROL MEASURES

- Assess the work and reduce manual handling of loads to the minimum.
- Seek advice from a safety and health expert.
- Avoid twisting and turning when lifting.
- Eliminate kneeled or bent-back working positions:
 - Install tables for fish sorting or gutting.
 - If kneeled positions cannot be avoided, use knee supports (foam inserted in pockets in the oilskin legs is better than elastic fastened knee supports).
 - Rotate staff in working positions in order to prevent excessive repeated actions.
 - Equip the wheelhouse with a seat for the helmsman.

12. SLIPS, TRIPS, FALLS...



REMOVE DANGERS

A SLIP OR FALL COULD HURT US ALL!

A fishing vessel is a restricted and congested space. It is a working platform that is always moving and is often slippery.

Adopt a proactive safety approach and avoid the risks, evaluate the ones which cannot be avoided, combat the risks at the source and replace the dangerous by the non-dangerous or the less dangerous.



HAZARDS AND CONSEQUENCES

- Tripping over an obstruction.
- Slipping on a slippery deck.
- The consequence of such trips or slips could be:
 - A fall from height;
 - A fall on to machinery;
 - Falling overboard.

Injuries or even death could be the result.



CONTROL MEASURES

- Physically split working areas from storage areas, with boards or other barriers.
- Implement non-slip treatments on the deck of working areas.
- Use non-slip boots.
- Install handrails where feasible.
- Refrain from storing nets or ropes in the working area.
- Systematically wash the deck at completion of catch processing.
- Have a waste system for the guts and other fish waste at each fish gutting position.

**MAKE IT EASIER****MIND YOUR BACK AND BE AWARE OF OTHER DANGERS**

Many fishermen suffer from back problems as a result of not using correct lifting techniques and/or trying to lift too much.

Other problems are working in areas with low head room, working with machinery, such as conveyors and elevators, or using chemicals in the treatment of prawns and general safety in the fish hold.

**HAZARDS AND CONSEQUENCES**

- Repeated manual handling.
- Lifting heavy loads.
- Insufficient mechanisation.
- Poor working area.
- Conveyors and elevators without adequate guards or emergency stop.
- Allergic reaction to the antioxidant used to dip prawns.
- Hazards in the fish room.



II-7. Organise to make handling easier (Saba Nordstrom © European Union).

**CONTROL MEASURES**

- All persons to be instructed in correct manual handling techniques.
- Provide mechanised handling if appropriate, such as a conveyor or elevator.
- Assess the catch handling area and remove any unnecessary obstructions.
- Ensure that the catch is gutted or sorted at a good working height and that the crew have a secure backrest or rail to steady them against vessel motion.
- Use baskets and boxes that will not be too heavy when full.
- Ensure that conveyors or elevators are adequately guarded and that clothing will not catch in them. Consider an emergency stop in a suitable position.
- Ensure that the safety precautions are followed with any chemicals used.
- Ensure that the fish room is safe with a secure access ladder.
- There are no obstructions on the floor or missing gratings.
- The lighting is adequate and there is proper provision to retain fish boxes in place.

WORK AT A COMFORTABLE HEIGHT

PROTECT YOUR HANDS AND LOOK AFTER YOUR BODY

Cuts to the hands are one of the most common types of injuries in fishing and should be taken seriously due to the high risk of infection from even minor wounds.

Also, repeated and long lasting uncomfortable and awkward working positions while fish gutting may generate severe disorders in arms, shoulders, knees.

HAZARDS AND CONSEQUENCES



II-8. Dangerous working without gloves (Jaana Mettala © European Union).

- Use of sharp knives without hand protection while gutting the fish.
- Cold weather increases the risk of cutting the hands and fingers.
- Uncomfortable working positions when fish gutting may result in elbow or shoulder tendinitis or wrist pain.
- Gutting should be carried out in a safe and comfortable position preferably standing.
- Gutting certain species of fish may be dangerous (cuts, projections in the eyes, allergies).

CONTROL MEASURES

- Use adequate hand protection (the correct type of gloves).
- Adjust the speed of work and take regular breaks.
- Ensure knives are kept sharp and clean.
- Use appropriate knives and gloves giving a firm grip and protection from cuts.
- Establish anti-slipping surfaces where the fishermen are standing.
- The gutting table should be adjustable to accommodate for crew members of varying heights.
- Try to avoid kneeling while working.



II-9. Safe working with gloves (Dominique Leveil © European Union).

**TAKE CARE****USING A BILGE CLEANER OR OTHER CHEMICAL?****READ THE LABEL. DON'T JUST ASSUME THAT YOU KNOW ENOUGH TO BE SAFE!**

Chemicals are used for the operation and maintenance of the vessel and many of them can be dangerous. The manufacturer must supply a Safety Data Sheet with the product and you must be sure to obtain it and read it carefully.

In addition to chemical dangers onboard there are also biological dangers from certain fish and other sea creatures as some species bite and some have poisonous stings. You should wear gloves and protect your face when necessary.

**HAZARDS AND CONSEQUENCES**

- Chemicals, if not used correctly can be dangerous:
 - for the eyes,
 - for the skin,
 - in case of inhalation,
 - in case of ingestion,
 - to the environment.
- Chemicals can generate heat resulting in a possible fire.
- Bites and stings from marine species can sometimes contain poison.
- Infection can result from cuts or scratches caused by the bones or fins of fish.

**CONTROL MEASURES**

- Read the labels and list or identify dangerous chemicals, sum up the precautions and actions to be taken, inform crew.
- Follow the recommendations, including those related to protective equipment (gloves, glasses, mask etc.).
- Separate storage of dangerous chemicals.
- Label any container that is different from the original packaging.
- Never mix together different chemicals.
- Identify venomous fish species, use appropriate gloves when handling them.
- Wash with soap and hot water at the end of every watch.

**GET CHECKED UP!****INCLUDE YOURSELF ON THE MAINTENANCE PLAN — YOU ARE A KEY ELEMENT**

Visit the doctor at regular intervals....

Voluntarily if there is no legal obligation in your country.

Note: Workers are entitled to have access to medical surveillance at regular intervals if they so desire.

**HAZARDS AND CONSEQUENCES**

- Fishing is a demanding occupation and your physical fitness may deteriorate if not closely monitored.
- Variations in weight, blood pressure, physical or mental fitness may be evidence of more serious diseases.
- You need regular monitoring and advice.

**CONTROL MEASURES**

Regular medical examination may not be required by national regulation, but even so, it is highly recommended as it will:

- Ensure that you are fit enough to carry out the work and cope with any emergency;
- Reduce the risk of an illness at sea where there is no proper treatment;
- Diagnose illness at an early stage, giving the best opportunity for effective treatment.

ILO Convention No 188 proposes compulsory medical examinations for fishermen.



LET SOMEONE KNOW

Prevention is based on experience and those in charge of prevention policies need information from:

- Accidents, with details on their circumstances
- Occupational diseases related to fishing activities

LEGAL REQUIREMENTS

- Notification of occupational injuries resulting in at least one day loss of work is mandatory under national legislations. Notification is made by the employer to the Maritime Authority.
- Reporting of occupational diseases is also mandatory in most countries.
- These obligations should be the basis for prevention, medical care and compensation under the social protection systems.



CONTROL MEASURES

- Beyond the legal obligations, any occupational injury, even without any resulting damage, should be declared, with detail on the circumstances, for the sake of statistics and improved prevention.
- Notification of occupational diseases to the maritime authority is also advisable, even where non mandatory. Any medical doctor who becomes aware of any possible occupational disease should report these to the maritime authority.
- Detailed knowledge of occupational accidents and diseases is the basis for preventative action.
- Notification and a detailed description of injury or the effects of a disease is the essential step to register an incident and to pursue legal/financial compensation.

Module III • Fishing operations

1. TRAWLING

- 1.1. HANDLING TRAWL DOORS
- 1.2. WINCHES, WARPS, TOWING CHAINS
- 1.3. BAG LIFTING, NET DRUMS AND MORE

2. POTTING

- 2.1. LAYOUT AND SYSTEM
- 2.2. SHOOTING
- 2.3. HAULING
- 2.4. DAVIT BLOCK, EMPTYING, BAITING AND CATCH STOWAGE
- 2.5. RECENT DEVELOPMENT

3. NETTING/LINING/JIGGING

- 3.1. STOWAGE OF GEAR AND STABILITY
- 3.2. SHOOTING NETS AND LINES
- 3.3. HAULING
- 3.4. FISH REMOVAL, LINE BAITING
- 3.5. JIGGING AND MECHANISED SYSTEMS

4. DREDGING AND BEAM TRAWLING

- 4.1. STABILITY AND SAFETY RELEASE
- 4.2. WINCHES, WARPS AND CONTROLS
- 4.3. HANDLING THE GEAR

5. PURSE SEINE

- 5.1. AUXILIARY BOAT
- 5.2. WINCHES, HAULERS, CRANES, ROPES AND LIFTING TACKLE
- 5.3. CATCH STOWAGE, VESSEL STABILITY AND FREE MOVEMENT AROUND THE VESSEL

**INSTALL
EMERGENCY
STOPS**

1. TRAWLING



TAKE CARE!

HEAVY GEAR, HIGH LOADS

Handling heavy trawl doors, warps under high load, the gear becoming fast, shooting and hauling in rough sea conditions; all make trawling potentially very dangerous and great care is needed at all times.



KEEP CLEAR

HEAVY TRAWL DOORS, VESSEL ROLLING AND PITCHING: ARMS AND HANDS NEED TO BE CLEAR!

The arrangements for chaining up the doors also known as 'dogging up' at the gantry need to be well thought out and the winch operator needs to ensure that the men at the doors are clear before operating the winch.



HAZARDS AND CONSEQUENCES

- Hand or arm trapped between the door and the vessel.
- Hand or arm trapped when passing chain through opening.
- Trawl door swings inboard striking the man.
- The winch is operated before the man handling the 'dog-chain' is clear.



CONTROL MEASURES

TRAWL DOOR HANDLING

Ensure that it is easy to reach to chain up the doors at the gantry by fitting a step if necessary. Install an additional handrail, higher up, to ensure that the person standing up high to reach cannot fall overboard.

CHAINING UP

Do not place hand or arm through any openings, throw the chain through when securing the door.

DOOR SWINGING INBOARD

Are the doors liable to be lifted too high and swing inboard striking the crew member and can a safety rail or barrier prevent this?

LOCATION OF WINCH CONTROLS

The winch operator must be in a good position to clearly see that crew members, handling the trawl doors and other operations, are stood clear before operating the winch. If the operator cannot see all persons involved, a clear system of signals needs to be established.

PREVENT INJURIES

UN-GUARDED WINCHES AND WARPS ARE JUST WAITING FOR YOU TO SLIP AND FALL

Just a simple guard, barrier or a hand rail can prevent you from falling onto the moving winch or warps.



HAZARDS AND CONSEQUENCES

- Falling on to the rotating winch.
- Clothing snagged by splinters in the warp and being dragged into a sheave or winch.
- Worn components breaking causing injury or death.
- Towing point or towing chains failing causing injury or death.
- Injuries from transferring warps during pair trawling operations.



CONTROL MEASURES

UNGUARDED WINCH

Make sure that the winch is adequately guarded such that a person falling against the rotating winch would be safe. A simple handrail in front of the winch could be sufficient to prevent someone being seriously injured or killed.

WARP RUNS

They are dangerous if unguarded, as a splintered wire can snag in a crewman's oilskins and drag a hand or a foot into a sheave. A guard or a barrier that prevents contact with the moving warp will remove the risk.

WORN COMPONENTS & GEAR

- Maintain the winch in good order with emergency stops, effective controls, brakes, clutches and guiding on gear.
- Ensure that the winch rollers, deck sheaves and hanging blocks and shackles are in good condition.
- Worn components and fittings can suddenly fail resulting in accidents.
- Note: all items used for lifting must be tested and rated with a Safe Working Load and inspected annually by a competent person.

See Module V and the Annexes.

TOWING CHAINS

Ensure that the towing point, the towing chains/wires and the 'stopper' chains are in good condition and that all crew members are aware of the dangers of transferring the load and that they stand clear.

SLACK WARP

Do not stand on slack warp laid on the deck; if the 'stopper' chain slips, it may suddenly become tight throwing you up and perhaps overboard.

PAIR TRAWLING — WARP TRANSFER

- Ensure that the weighted end of the throwing line is padded to lessen the chance of injury when it is thrown to the crew on the partner vessel.
- The crew member releasing the slip hook must be aware of the danger of the slip hook springing back.
- Use a long bar to knock the slip hook open.

PREVENT INJURIES

DON'T TAKE RISKS GETTING THE CATCH ON BOARD

Reaching to hook in the bag lift wire and lifting the bag aboard does pose risks, especially lifting heavy bags on vessels which will also reduce the vessels stability.

HAZARDS AND CONSEQUENCES

- Falling overboard when reaching out board.
- Struck by the swinging bag.
- Vessel in danger of capsize by heavy lift.
- Crewmember carried around the net drum.
- Structural changes to the vessel affecting stability.

CONTROL MEASURES

HOOKING IN THE LIFTING BECKET

- Ensure that the crew member is not at risk when reaching over the rail to hook into the lifting becket. Can changes be made to make this operation safer?
- A safety harness should be worn if it is not possible to avoid the need to lean a long way over the rail.

BAG LIFTING

Ensure that there is an effective means to prevent the bag from swinging dangerously and that the winch operator can see the crew members handling the bag.

HEAVY LIFTS

- Lifting large catches on board can risk the vessel through loss of stability especially if a heavy bag is lifted when the vessel is heavily loaded with fish on deck.
- Fish on deck must be contained in boxes or pounds to prevent it from moving and causing the vessel to list over.
- Unexpectedly heavy loads in the cod end such as stones or mud can place excessive strains on the lifting derrick and rigging causing it to suddenly break injuring crew members. Trying to lift a heavy weight on board may result in vessel capsize and if in doubt, the net should be cut open to release the load.

NET DRUM

The person at the controls of the net drum must be able to see crew members handling the net to be able to stop the drum immediately if necessary. If this is not the case, an additional control or an emergency stop near the net drum is necessary.

STABILITY

If items such as a net drum and a powerblock are installed after the vessel was commissioned, checks should be made to ensure that the stability of the vessel has not been compromised.

**See related incidents in Module IV: 8 Struck by the swinging bag (head injury)
and 9 Dragged into the net drum (arm injury).**

2. POTTING



KEEP CLEAR

DON'T GO DOWN WITH THE POTS!

Potting has become a very popular fishing method for small vessels but, the risk of being entangled in the rope or struck by a pot means it is also a dangerous method for crew members.

MAKE IT SAFE

THE SAFEST LAYOUT IS USUALLY THE MOST EFFICIENT

Consider how you can arrange to work pots on your vessel such that the crew can work safely and efficiently.

HAZARDS AND CONSEQUENCES

- Crewman becoming entangled in the rope and dragged overboard.
- Being struck by a pot.
- Several pots are dragged out of sequence endangering the crew.
- The vessel is overloaded and founders or capsizes.
- Working single handed.

CONTROL MEASURES

VESSEL LAYOUT

- Ensure that the layout of the vessel allows safe and efficient working of pots/creels. Look for possible snag points that the rope or pots may snag on when shooting.
- To lessen the danger of crew members becoming entangled with the rope, consider if it is possible to install a barrier to contain the rope clear of the area where the crew are handling the pots.
- Consider if an improved layout may be possible to enable the pots to be shot directly off the deck via a transom gate or a shooting ramp whilst the crew are safely stood clear in a forward position.

See new development on following pages.

NUMBER OF POTS

Is the number of pots in each 'string' limited by the number of pots that can be easily and safely worked in the available deck space on the vessel? Would it be significantly safer to reduce the number of pots per string and to work extra strings?

POT STACKING

- Make sure that the pots are securely stacked ready for shooting such that they will not fall over with severe vessel motion and their shooting sequence becomes confused.
- Do you have a clear system of marking any out of sequence pot that has been left aside for repair prior to shooting?

STABILITY

- Consider the stability of your vessel especially when taking pots to and from a new area when it is very tempting to carry as many pots as possible.
- Stacking pots high and carrying a significant weight of rope on the deck will have a serious effect on the vessel's stability and freeboard.
- A heavily loaded vessel may appear to be safe in calm conditions but conditions can rapidly change; the vessel ships a little water or the gear shifts resulting in capsize!

WORKING SINGLE-HANDED

Consider your safety before thinking about the number of pots that you can work.

See fishing alone in Module 1:18 Single-handed working.

KEEP CLEAR

SHOOTING POTS CAN BE VERY DANGEROUS; GREAT CARE IS NEEDED

Try to separate the crew from the ropes; ideally, use a self shooting system.



HAZARDS AND CONSEQUENCES

- Being dragged overboard and drowning.
- Leg crushed by rope tight around it.
- Being struck by a pot.



CONTROL MEASURES

PLAN OF ACTION

Have a clear plan of action of who is doing each task.

SHOOTING EMERGENCY

- You and your crew should consider possible emergency situations that may occur and the best action to take.
- Ensure that all persons wear a personal flotation device and carry a knife to be able to cut themselves free of the rope.

ALL PREPARED

Having shot away the dhan and tow, ensure that everyone is prepared before releasing the anchor.

KEEP CLEAR

Keep clear of the back and leg ropes as the pots are handled over the rail.

SHOOTING SPEED

Would a modest reduction in shooting speed ease the pressure on the crew and make shooting much safer?

See related incident in Module IV: 6 Caught by the rope bight, Potting (foot injury).

PREVENT INJURIES

HAULING POTS IS REPETITIVE AND IT IS EASY TO LOSE CONCENTRATION AND GET YOUR HAND TRAPPED BY THE ROPE AROUND THE HAULER

HAZARDS AND CONSEQUENCES

- Hand trapped in hauler; loss of fingers.
- Hauler pulls the vessel over.
- Failure to stop hauler results in anchor or pot striking operator.

CONTROL MEASURES

V WHEEL HAULER

- Ensure that the sheaves are in good condition and that there is a good angle of wrap to effectively grip the rope ensuring that it does not suddenly pull back out putting the crew in danger.
- The ejector knife must be correctly in place to ensure that the rope ejects from the V of the sheaves.
- Operating a V section hauler without the knife is very dangerous as the rope may be carried around and pull the hands of the person handling the rope from the hauler into the sheaves.

CAPSTAN HAULER

- These need great care as a riding turn can quickly pull the operators hands into the drum.
- It is essential to slow down to guide each leg rope around the drum and the operator needs to ensure that no loose clothing or cuffs can catch in the rope around the drum.
- This type of hauler should ideally be replaced with the much safer V-wheel type.

MULTI-WHEEL HAULER

Care is needed to guide the leg ropes around the sheaves and operators must be very careful to ensure that their clothing does not become trapped by the rope around the sheaves.

HAULER CONTROL

- The control must be in good condition and within easy reach of the hauler operator.
- Fit a guard over the control to ensure that it cannot be operated accidentally or caught by the gear.
- Controls that give smooth speed control should be fitted in preference to just stop start controls.

HAULER POWER

- Excessive hauler power on a small vessel can very easily result in the vessel being pulled over if pots are fouled on the seabed.
- Check the relief valve setting of the hauler hydraulics and reduce the power to be sufficient to haul the string of pots effectively but not sufficient to endanger the vessel.

NEVER LEAVE THE HAULER UNATTENDED

Leaving the hauler unattended is tempting, especially when hauling long anchor tows, to leave the hauler control to carry out other tasks. Sometimes, the crewman returns just too late to stop the anchor/weight hitting the davit block and as they reach for the control the anchor/weight swings over striking them on the head.

2.4. DAVIT BLOCK, EMPTYING, BAITING AND CATCH STOWAGE

MIND YOUR BACK

YOU WILL HANDLE TONNES OF POTS EACH WORKING DAY SO GIVE YOUR BODY A CHANCE; HANDLE THEM CORRECTLY

Avoid bending reaching and twisting when handling pots. Carry them close to your chest with your back straight and bend the knees when placing down.

HAZARDS AND CONSEQUENCES

- Back and upper limb injuries from repeated manual handling.
- Vessel at risk of capsize if containers can fill with water or shift.

CONTROL MEASURES

DAVIT BLOCK

- Ensure that it is in good condition and is mounted such that it enables the pots to be hauled in board with the minimum of manual effort and without the crew member having to excessively bend, reach and lift to bring each pot over the rail.
- It must retain the rope effectively even when the vessel is rolling heavily. Recent developments have resulted in a wide, large diameter roller, mounted on the bulwark rail to assist in hauling the pots inboard.
- The pots can be hauled aboard without manual lifting making the hauling operation safer and more efficient.

See following page.

EMPTYING AND BAITING

The pots should be at a comfortable working height for the removal of the catch and re-baiting with the minimum of lifting and bending as the pot moves from the davit block/roller to the stacked position ready for shooting.

STOWING CATCH ON DECK

- On small vessels shellfish is often stowed in boxes or bins on the deck. Care must be taken to prevent the containers from shifting in bad weather, or blocking the freeing ports.
- Covers must be fitted on the containers as in rough sea conditions they may rapidly fill with water and possibly cause the vessel to capsize.

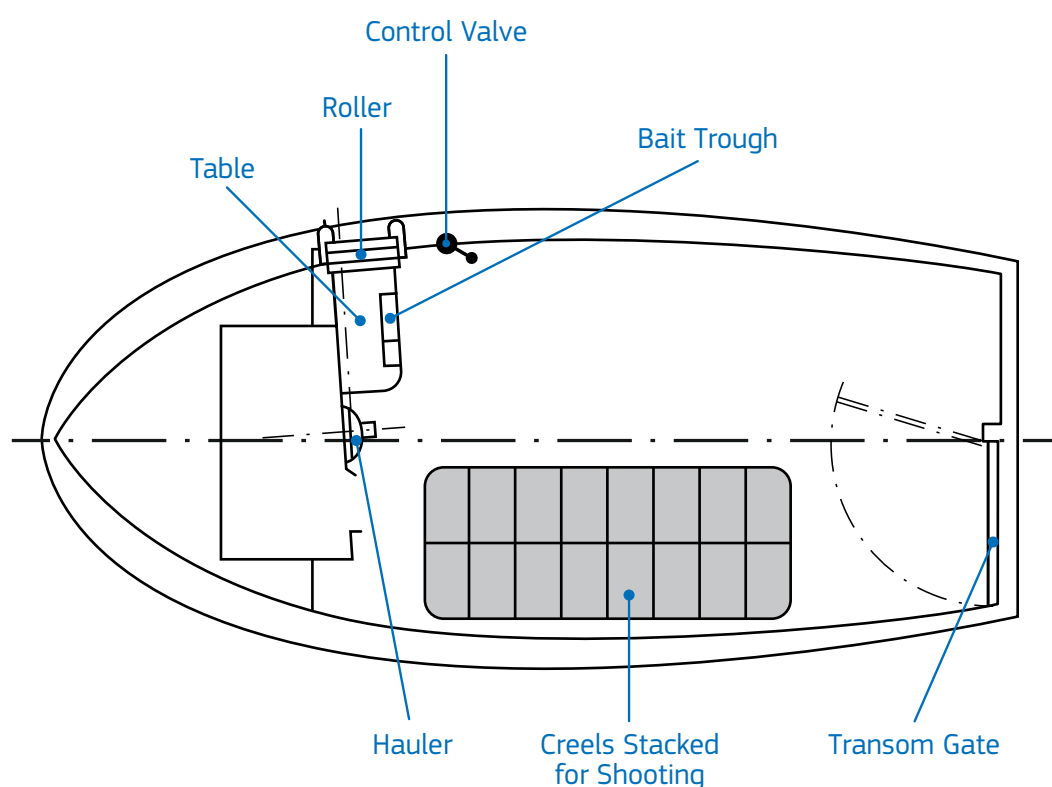
MAKE IT SAFE

RECENT DEVELOPMENT GIVES IMPROVED SAFETY

A recent development is to install a gate in the transom of the vessel to enable the pots to be shot directly off the deck. At the start of shooting, the dhan tow is paid away and attached to an anchor which is held suspended over the stern from a lanyard operated latch.

The end of the string of pots is attached to the anchor and all crew members move forward clear of the pots and rope. The lanyard is pulled from a forward position releasing the anchor and the pots are drawn in sequence through the gate and into the sea.

Another improvement is to install a wide, large diameter roller on the rail to haul the pots inboard without manual lifting. Vertical rollers constrain the rope over the main horizontal roller and the pots are hauled directly on to a table for emptying and re-baiting.



III-1. Layout of 9.8 m vessel with potting roller and transom gate (Adapted from Seafish, UK).

3. NETTING/LINING/JIGGING



PREVENT INJURIES

DON'T GET NETTED OR HOOKED!

Netting, lining and jigging are considered together as they have similar risks even though there are particular risks associated with each method.



DON'T OVERLOAD

GEAR STOWED ON DECK WILL ADVERSELY AFFECT STABILITY

On small vessels it is easy to overload and make the vessel 'top heavy'.
Think about the loading.



HAZARDS AND CONSEQUENCES

- Fishing gear stowed on the deck may make the vessel 'top heavy' and stability may be insufficient.
- Gear stowed on deck may block freeing ports with the result that the vessel cannot quickly shed water.



CONTROL MEASURES

NET/LINE STORAGE

- If bins or tubs are used to store the nets/lines ensure that these are secure on deck and will not slide in heavy seas reducing the stability of the vessel.
- The bins or tubs must have adequate drain holes in them and covers should be fitted to prevent them, rapidly filling with water and causing the vessel to capsize.

DHAN AND ANCHOR STOWAGE

- Ensure that these are stowed in a position where crew members can easily reach them without the risk of tripping and falling.
- Make sure that they do not block the visibility from the wheelhouse.

FREERING PORTS

- Ensure that items on deck do not block freeing ports.
- Heavy items should be stored below deck.

DON'T GET CAUGHT

SHOOTING BOTH NETS AND HOOKS CAN BE DANGEROUS

The fine monofilament netting easily snags on clothing, watches, rings etc. and you can be dragged overboard. Hooks have obvious dangers and great care is needed.

HAZARDS AND CONSEQUENCES

- Netting catches in clothing or other items dragging the crew member overboard.
- Crewmember stands on netting and is tangled in it carrying him overboard.
- Hooks snag a crew member, either ripping the flesh or sticking in the bone, perhaps even dragging him overboard.

CONTROL MEASURES

- Remove wrist watches or jewellery and wear suitable gloves.
- No snag points: ensure that clothing has no snag points.
- PFD: wear a personal flotation device that fits closely with no obvious snag points. Tuck the lanyard bead out of the way.
- A sharp knife is readily to hand to cut gear free if anyone is caught in meshes or hooked.
- Standing on the net: Shooting nets from bins is preferable to working from a deck pound as the net cannot be stood on.
- A shooting chute: will make shooting more snag free from bins as the nets will lift up vertically and not drag across.
- Shooting by hand: should be avoided with lines. It is much safer to lay baited hooks on the coils of line and to use a shooting chute or to flick the lines out of the bin with a shooting stick.

PREVENT INJURIES

EFFECTIVE HAULING EQUIPMENT IS MORE EFFICIENT AND SAFER

Ensure that the hauler is suitable for your operation and is in good condition.

HAZARDS AND CONSEQUENCES

- Hand or arm trapped in the hauler.
- Gear pulling back out injuring crew members.
- Gear sweeping across the deck.
- Controls not effective.

CONTROL MEASURES

NET HAULER

There are various types of net hauler ranging from a simple rotating drum design to complex multi-drum or conveyor types. It is important that guards are retained in place to protect crew members.

LINE HAULER

Typically, a V wheel hauler or a multi wheel hauler will be used. With the V wheel type, it is important that the ejector knife is in place and in good condition otherwise the line will not eject from the sheaves and can wrap around pulling the line back at serious risk to the crew.

PULLING BACK OUT

With netting and lining, the consequences of the gear suddenly pulling back out can result in injuries to the crew. It is essential that the hauler is maintained in good condition and the gear is not unintentionally drawn back out.

FAIRLEADS

If a fairlead or a hanging block is used to bring nets or lines inboard it must effectively retain the gear even when the vessel is rolling heavily, otherwise, the gear may sweep sideways across the deck endangering the crew. If a fairlead is not used, the hauler must be easily able to follow the 'lay' of the gear.

CONTROLS

- The control must be in good condition and within easy reach of the hauler operator. Make sure that the control cannot be operated accidentally or caught by the gear.
- Controls that give smooth speed control should be fitted in preference to just stop start controls.

3.4. FISH REMOVAL, LINE BAITING

HAVE REGULAR REST

REPETITIVE TASKS CAN BE MORE THAN BORING

Musculoskeletal injuries can result from tasks that require you to grip and manipulate with your fingers and wrists continually.



HAZARDS AND CONSEQUENCES

- Musculoskeletal injuries from the work of manipulating fish from the meshes of netting.
- Face and eye injuries from flying hooks.
- Musculoskeletal injuries from baiting hooks.



CONTROL MEASURES

FISH REMOVAL

Removing fish from netting or from hooks is a skilled task that requires the fingers to grip and manipulate. This, repeated thousands of times every day, does pose the risk of musculoskeletal injuries. It is recommended that regular breaks are taken by rotating the crew around the various tasks.

FISH STRIPPERS

If there is a risk of eye or facial injuries from 'flying hooks' that may jam in the stripper rollers and then fly out at speed when the 'snood' breaks, face visors should be worn.

BAITING LINES

Musculoskeletal injury is a risk due to the type of intense work with the fingers and wrists. It is recommended that frequent short breaks are taken, work in a comfortable position that avoids bending and hands are kept warm by periodically immersing in warm water. Wash hands thoroughly to protect against infections from the bait.



III-1. Fish handling (Dimitrios Damalas © European Union).

PREVENT INJURIES

MACHINERY CAN BE DANGEROUS; MACHINERY WITH HOOKS, TAKE CARE

HAZARDS AND CONSEQUENCES

- Being injured by hooks.
- Musculoskeletal injury.
- Injured by machinery.

CONTROL MEASURES

JIGGING EQUIPMENT

- Ensure that the jigging reels or mackerel gurdies are securely mounted at height that enables the crew members to operate them comfortably and safely.
- Lures and hooks passing across the deck or over the gunwale have obvious dangers for crew members.
- Where guards or barriers are practical they should be installed.
- Powered jigging reels must have stop controls within easy reach of the person operating the reel.

MECHANISED/ELECTRONIC SYSTEMS

- Mechanised electronic jigging systems must only be used by persons who have had training in the safe use of such equipment.
- Guards must be in place when in use and the equipment must be isolated from the power source when cleaning or maintaining it.

MECHANISED LONGLINING

- This can be a simple system utilising a random baiter or a totally mechanised system that baits the hooks with a precision baiting machine; hauls and removes fish; cleans the hooks and loads them onto storage rails ready for shooting.
- Whether it is simple or complex, it is essential that the crew are fully trained on how to operate it, how to clean it and the dangers it may pose to them.

KEEP STABLE

TAKE GREAT CARE TO MAINTAIN BALANCE AND STABILITY

Dredging and beam trawling have been linked together here because they both use derricks to lift outboard and then tow heavy fishing gear on each side of the vessel (exceptions are those vessels that work dredges or a beam trawl from a stern gantry).

A major concern with this type of fishing is the stability of the vessel. The weight of the fishing gear is substantial and care must be taken to keep the vessel evenly balanced.

Problems occur when the dredges or the net become very heavy with stones or the gear becomes fast on the seabed. It is essential to avoid applying too much load unevenly on the vessel.



III-2. Dredging vessel (Sara Monteiro © European Union).



KEEP STABLE

CHECK STABILITY AND SAFETY RELEASES

Stability needs to be checked by a qualified naval architect when the vessel is first rigged for dredging or beam trawling.

If stability is not sufficient it may result in capsize.



CONTROL MEASURES

STABILITY

Beam trawling or dredging involves the lifting of heavy gear from derricks which results in large overturning forces on the vessel. It is essential that the stability is properly checked when a vessel is rigged for these fishing methods. All persons who have control of the vessel must be aware of the dangers of uneven loading and the need to avoid light ship conditions when working the fishing gear.

SAFETY RELEASE DEVICES

To reduce the danger in a situation where the gear is fast on the seabed the derricks should be fitted with a release device to transfer the load from the end of the derrick to the side of the vessel. Usually such devices release the derrick towing block down a wire to the bulwark rail and thus the potential capsize lever on the vessel is greatly reduced.

GEAR FOULED ON SEABED

- When trying to free fouled gear, ensure that all persons are aware of the danger of uneven loading resulting in vessel capsize.
- Lifejackets should be worn, hatches and doors closed and the Coastguard authorities informed.

FIT GUARDS

MAKE IT SAFE

Fit guards or barriers, replace worn components and make sure that the winch operator can see what is happening.

HAZARDS AND CONSEQUENCES

- Crewmember falling on to the rotating winch or snagged by the warp and a hand or foot dragged into a sheave.
- Worn component failing resulting in injuries or death.
- The winch is operated before the crew member was clear resulting in injury or death.

CONTROL MEASURES

UNGUARDED WINCH/WARP RUNS

- Make sure that the winch is adequately guarded such that a person falling against the moving winch would be safe. A simple handrail in front of the winch could be sufficient to prevent someone being seriously injured or killed.
- Warp runs are dangerous if unguarded, as a splintered wire can snag in a person's oilskins and drag a hand or a foot into a sheave.
- A guard or a barrier that prevents contact with the moving warp will remove the risk.

WORN COMPONENTS AND GEAR

Maintain the winch in good order with effective EMERGENCY stops, controls, brakes, clutches and guiding on gear. Ensure that the winch rollers, sheaves, derricks, stays, hanging blocks, shackles and warps are in good condition. Worn components and fittings can suddenly fail resulting accidents.

NB: All items used for lifting must be tested and rated with a Safe Working Load and inspected annually by a competent person. (See Module VI). Signage must be displayed indicating the direction of movement.

LOCATION OF WINCH CONTROLS

- The winch operator must be in a good position to clearly see that crew members, handling the beam trawls/dredges and other operations are stood clear before operating the winch. If the operator cannot see all persons involved, a clear system of signals needs to be established.
- The winch controls must be guarded and safe from accidental operation, say from a rope/netting or, a person's clothing snagging on them.

KEEP CLEAR

CONTROL HEAVY GEAR AND DON'T REACH TOO FAR

Heavy gear has to be under control at all times for the safety of the crew. Be safe when reaching outboard.

HAZARDS AND CONSEQUENCES

- Crewmember crushed by heavy gear swinging or sliding.
- Falling overboard when reaching out board.
- Struck by the swinging bag or swinging dredge.
- Heavy load risks vessel capsize.



III-3. Handling the gear (Laurent Markovic © European Union).

CONTROL MEASURES

RESTRAINING

- Ensure that there is an effective means of restraining the beams/dredges to prevent the heavy gear swinging, rolling or sliding across the deck and injuring crew members.
- Secure the gear from movement to make sure that crew members can make repairs without risk of injury.

HOOKING IN THE LIFTING BECKET

- Ensure that the crew member is not at risk when reaching over the rail to hook into the lifting becket. Can changes be made to make this operation safer?
- A safety harness should be worn if it is not possible to avoid the need to lean a long way over the rail.

BAG/DREDGE LIFTING

- Ensure that there is an effective means to prevent the bag/dredge swinging and endangering the crew when being lifted for emptying.

EXCESSIVE LOADS

- Will you be aware if the trawls/dredges contain excessive loads (mud or stones etc.)? High loads can cause lifting derricks to fail possibly injuring crew members. Attempting to lift a heavy weight on board may result in the loss of stability risking capsize.
- Extreme care must be taken and crew members instructed to stand clear when heavy loads are lifted.

See related incident in Module IV: 11 Dredge emptying, reaching too far! (fall overboard).

THINK SAFETY

BIG NETS, BIG CATCHES, BIG RISKS!

Using a purse seine to catch pelagic species brings the risk that the quantity of fish in the net may endanger the vessel. Handling a large net, with large quantities of fish and the loads involved in hauling will pose real risks for crew members.

See incident in Module IV: 4 Catch for bigger profits (capsize).



III-4. Purse seine vessel (Sara Monteiro © European Union).

TAKE CARE

AUXILIARY BOAT OPERATIONS ARE DANGEROUS

Launching and recovering the boat can be dangerous for all involved and the crewmen manning the boat are at risk when transferring to or from it. Also, there are the obvious dangers of the sea conditions for such a small boat.

HAZARDS AND CONSEQUENCES

- Wires/ropes breaking, or jamming in blocks, when launching or recovering the auxiliary boat from/on to the vessel leading to crew members being injured.
- Falling overboard when transferring to or from the auxiliary boat.
- Capsize of auxiliary vessel due to sea conditions.

CONTROL MEASURES

- The vessel must be properly equipped to safely perform the launching and recovery of the auxiliary boat. Winches, lifting gantries and all wires, ropes, sheaves, blocks etc. must be maintained in good order.
- To assist the safe boarding/leaving of the auxiliary boat a suitable platform or ladder should be installed to enable crew members to step safely on and off the boat.
- A handrail or stanchion at a suitable height on the auxiliary boat that provides a hand hold will enable the person to regain their balance once on the boat.
- When a person is boarding or leaving the auxiliary boat, careful watch should be kept from the wheelhouse and by those involved with the auxiliary boat in order that immediate action can be taken if the person should fall.
- A personal flotation device must be worn by all persons working on the deck of the vessel and especially those persons involved with the auxiliary boat.
- Radio communication must exist between the vessel and the auxiliary boat.
- The auxiliary boat should be equipped with buoyancy compartments such that, even if it is swamped it will not sink.



III-5. Purse seine carrying auxiliary boat (Jean-Noël Druon © European Union).

5.2. WINCHES, HAULERS, CRANES, ROPES AND LIFTING TACKLE

TAKE GREAT CARE

HAULING AND LIFTING OPERATIONS

Operations with winches, haulers, cranes etc. are generally responsible for serious work accidents. With purse seine operations the quantity of fish handled, both when brailing from the net and in containers when landing, increases the likelihood of such accidents.



HAZARDS AND CONSEQUENCES

- Ropes or lifting tackle breaking under load and whipping back injuring crew members.
- Ropes breaking when a turn rides up and jams in the winch or hauler.
- Clothes or limbs dragged into sheaves, haulers or rollers.
- Loads being dropped when lifting, killing or injuring crew members.



CONTROL MEASURES

MAINTENANCE

- All the equipment and ropes are to be inspected regularly and maintained in good order.
- Ropes that have suffered a lot of abrasion need to be replaced.
- Ropes exposed to sunlight should be regularly inspected and replaced if necessary.
- Ensure that all lifting equipment is appropriate for the load being lifted (see Work equipment in Module VI).

VESSEL PROVISIONS

- Install handrails or barriers where appropriate to prevent persons falling on to moving ropes/ wires or equipment.
- Install a self tensioning purse line hauler to avoid the risk of a crew member being caught in the hauler.
- Lifting the 'drying up' rollers up clear of the bulwark reduces the risk to crew members.
- Install an intercom system between the wheelhouse and critical areas on the deck to give good clear communication.
- Emergency stop controls on the deck for deck machinery.
- Emergency stop controls for deck machinery in the wheelhouse.
- Install controls that give smooth speed control not just stop/start.

CREW PROVISIONS

- Wear a personal flotation device (PFD) when working on deck.
- Wear the correct personal protective equipment: oilskins, gloves, boots and hard hat.
- Do not wear jewellery, chains, ear rings, watches etc. that may catch in netting.
- Stand clear of operations if you are not directly involved.
- Do not stand underneath a suspended load.
- Do not obstruct the vision of the operator of the winch or crane.
- Pay attention to what is happening as a distraction can be fatal.
- Ensure that you understand any hand signals that are used.

DON'T OVERLOAD

CHECK STABILITY AND FREEING PORTS

Large quantities of fish can be caught and stowing this can take up all the available space on the vessel. It is essential that the stability of the vessel is considered and the safety of the crew, who have to move around a vessel severely restricted by pounds or containers of fish.

HAZARDS AND CONSEQUENCES

- Overloading, vessel freeboard is reduced and the vessel capsizes.
- Free surface effect of fish on deck; vessel capsize.
- Containers not correctly positioned and secured; vessel capsize.
- Free movement of the crew is restricted; slips trips and falls.
- Crewmembers stood up on the lids of containers are above the protection of the bulwark rail.
- Lighting not sufficient in all deck areas.



III-6. A lot of fish but how much stability? (Sara Monteiro © European Union).

CONTROL MEASURES

- Skippers need to be aware of the carrying capacity of the vessel with respect to the vessel's stability and not overload the vessel. If a past record of safe operation is not available, the stability must be assessed.
- If additional carrying capacity is being considered or a new method of stowing, such as containers, a stability assessment should be carried out to verify that the vessel will be stable.
- Deck pounds should have divisions to prevent 'free surface effect' in the fish. Similarly, the hold must have divisions.
- Containers must be securely positioned to prevent sliding and causing the vessel to capsize.
- Safe walk routes should be made to give the crew safe access to the essential areas of the vessel.
- If crew are stood above rail height a safety line should be rigged.
- Lighting must be sufficient in all areas.



III-7. Fish stowed in bins (Themistoklis Papaioannou © European Union).

Module IV • Real case events

1. FAMILIARITY CAN MAKE YOU OVERCONFIDENT | RUNNING AGROUND
2. REPLACEMENT PARTS | DREDGER CAPSIZE
3. MAN OVERBOARD | DROWNING
4. CATCH FOR BIGGER PROFITS | CAPSIZE
5. TOO LITTLE SLEEP | RUNNING AGROUND
6. CAUGHT BY ROPE BIGHT (POTTING) | FOOT INJURY
7. THE ENGINE, YOUR VESSEL'S HEART | FLOODING, CAPSIZE AND DEATH
8. STRUCK BY SWINGING BAG | HEAD INJURY
9. DRAGGED INTO THE NET DRUM | ARM INJURY
10. REMEMBER THE FUEL | GROUNDING
11. DREDGE EMPTYING, REACHING TOO FAR! | FALL OVERBOARD
12. STABILITY CHECK | FLOODING, CAPSIZE AND DEATHS
13. THE ELECTRICAL SYSTEM | FIRE IN THE ENGINE ROOM
14. FISHING ALONE? — BE CAREFUL
 - 14.1. TRAPPED UNDER THE WINCH | BODY INJURIES
 - 14.2. SKIPPER MISSING

**DON'T
LEARN THE
HARD WAY**

1. FAMILIARITY CAN MAKE YOU OVERCONFIDENT | RUNNING AGROUND

DON'T LEARN THE HARD WAY

APPLY PASSAGE PLANNING

Human error is the cause of many accidents, particularly with navigation. Wind and tide can have effect on the vessel, so use all means available to make sure you are where you think you are!

INCIDENT AND CONSEQUENCES

An 11 metre trawler had worked the Black Sea where a large delta has an extensive shallow area, reaching out some 15 kilometres from the shore. The vessel had been operated by the same skipper for many years and had passed all the authority requirements.

Strong tide but normal trip: One evening the vessel sailed at 22.00 with eight crew members on board. The tide was running at about five knots and there was reduced visibility. After four hours of fishing the vessel set off to return to the harbour; the visibility had improved but there was still a strong tide running. All the crew were in the cabin leaving the skipper in the wheelhouse.

Familiar surroundings: The vessel was not far from port and after one hour, the skipper saw the light tower of the harbour. As he was very familiar with the area he switched off the echo sounder and proceeded towards the harbour. However, when it was quite close to the harbour the vessel ran aground.

A MAYDAY transmission was made and the local coastguard got all persons off safely. However, the costs for salvage, repairs to the vessel and lost fishing time were large.

HAZARDS

Skipper's complacency.
Switched off instruments.
Strong tide.

DEFENCES

Passage planning.

LESSONS LEARNT

- Use of passage planning all available equipment to track your position.
- Experience and electronic aids can work well together but total reliance on just one alone can result in disaster.

DON'T LEARN THE HARD WAY
LOOK FOR ALL POSSIBLE PROBLEMS!

Think carefully about possible situations when you make any changes to the vessel and carry out a risk assessment of the fishing operations in order to be prepared for any difficulties that may occur. Even in calm conditions, 'coming fast' can result in capsizing.

INCIDENT AND CONSEQUENCES

An under 12 metre stern trawler/scallop dredger had been in the family for 20 years and was well run and profitable.

Safety conscious: The owner was safety conscious and had insisted that inflatable lifejackets were readily available in the wheelhouse and that all the crew had completed the safety courses. A four man liferaft with a hydrostatic release was installed on the vessel and also a safety locator system, that sent out the vessel's position and course every hour. Included with this locator system, were four personal alarms to be worn by the crew members; these would transmit an alert should a crew member fall overboard.

Changes made: The vessel was rigged both for stern trawling and dredging and when it was last changed to dredging two of the main warp blocks were replaced with smaller throated blocks.

Calm conditions: The vessels had sailed some nine hours to the fishing ground and fished in very calm conditions with little swell. The tide was running at about two knots and was known to reach four knots. However, the skipper had worked these grounds many times before and fishing was good. At 16.30 the dredges hit rough ground and the vessel slowed. Engine revs were increased but soon afterwards the dredges started to snag. On each occasion the skipper manoeuvred the vessel and the snag was released.

Coming fast: At 16.35 the port dredge came fast, the vessel head turned to port and the vessel adopted a 20° port heel. The skipper selected neutral but the heel increased under the influence of the strong tide and the head continued to turn to port. By now the port derrick was under water and the starboard derrick was steadily rising as the heel increased. In the rapidly changing situation, the skipper did not think to use the quick release mechanism that would have dropped the derrick blocks to the vessel side and would have lessened the heel.

Getting worse: At 16.38, the starboard warp became entangled around the crutch, supporting the landing boom and this caused the boom to swing to port. At the same time, seven bags of scallops slid from near the hatch to the port side. The skipper recognised how serious the situation was and attempted to release both warps from the winch drums. The warp joining shackles, however, would not pass through the recently changed blocks. A gas cutting torch was lit to cut the warps but the heel exceeded 45° causing rapid flooding of the net store through the open hatch.

The crew jumped into the water and the skipper fought his way to the wheelhouse to transmit a 'Mayday'. Unfortunately, the VHF hand set fell away before he could do so and he could not reach the DSC button. He did reach a hand held VHF radio but lost it from his grasp before he could complete the 'Mayday' transmission. With no further options, the skipper jumped into the water to join the crew.

No lifejackets: None of them were wearing lifejackets or personal flotation devices as there had been no time to collect them from the wheelhouse where they were stowed. After about five minutes in the water the liferaft inflated and floated free. The crew managed to reach the liferaft and haul themselves into it. This took around 20-25 minutes and they then set about checking the equipment and the integrity of the liferaft as instructed on the sea survival course.

Saved by beacon: With the vessel now submerged, the onboard auto locator beacon failed to perform its hourly transmission. Such failure was then passed onto the Coastguard, who alerted the local lifeboat that happened to be exercising in the area. The crew were recovered at 17.57 all unharmed.

HAZARDS

Unsuitable replacement. (trawl block of reduced throat size).

DEFENCES

Vessel equipped with EPIRB and lifesaving equipment.
Timely rescue services.

LESSONS LEARNT

- This incident demonstrates how quickly a 'coming fast' situation can lead to capsize and sinking even in calm conditions.
- Always carefully consider the possible implications of any changes you make to the fishing.
- Carry out a risk assessment of the possible hazards and how you can deal with them.
- Consider the early use of the 'quick release systems' as the overturning load on the vessel would have been significantly reduced.
- Personal flotation devices should be worn when working on the deck, in an emergency there is never time to retrieve them from the wheelhouse.
- Carrying a liferaft with a float free release enabled the crew to survive to be rescued.
- An EPIRB or, as in this case a location reporting system, is essential to alert the rescue services.
- Avoid flooding through open hatch — keep hatches closed at sea, or when not in use.



DON'T LEARN THE HARD WAY

WEAR YOUR PERSONAL FLOTATION DEVICE AT ALL TIMES!

Preparing to enter harbour in calm conditions, no one expects to lose a life!

INCIDENT AND CONSEQUENCES

Just before sunrise and very close to the coast of Cadiz (2-3 miles), a seine vessel was stowing the fishing gear and preparing to enter to the nearest port, when a crew member fell overboard. It is assumed that the fisherman had unsuccessfully attempted to transfer from the vessel to the auxiliary dinghy, and neither the skipper nor the crew had noticed. A few minutes later (10-15), once the fisherman's disappearance was realised by the crew, it was too late to save him, despite weather conditions being absolutely fine in the location. The fisherman was not wearing the compulsory lifejacket.

HAZARDS

Not wearing a PFD.

No supervision of the man's transfer to the dinghy.

DEFENCES

Communicate your intentions to other crew members if you perform a dangerous operation.

Wear a PFD.

Timely rescue services.

LESSONS LEARNT

- Any transfer to the dinghy, before entering the harbour, is dangerous if the following actions are not considered: Reduce the speed or stop the vessel before attempting any transfer.
- Always wear a Personal Flotation Device.
- At least one crew member must keep a visual check of the person trying to embark into a dinghy.
- If feasible, make use of radio communications between the dinghy and the vessel.

DON'T LEARN THE HARD WAY
THOUGHTLESS CHANGES OFTEN RESULT IN NEW PROBLEMS!

Think carefully about possible situations when you make any changes to the vessel and carryout a risk assessment of the fishing operations in order to be prepared for any difficulties that may occur.

INCIDENT AND CONSEQUENCES

A 14 metre purse seiner had worked the Black Sea fishing successfully for anchovy for around 15 years. Successful business: Anchovy had been abundant the previous year and the vessel had made good money which the skipper/owner invested in having the vessel extended to 16.99 metres.

Delicate decision: The following season did not start well, as the anchovy shoals were few and straggly. After a few poor trips the skipper decided to extend the length of the net to be able to fish a bigger area and thus catch more fish.

Storm coming: The crew started the task of rigging the bigger net working in the harbour. The rigging would take a few days but as a storm was forecast over the next four days, fishing time was not going to be lost. After five days the net was finished and as the wind speed had dropped, the skipper decided to put to sea, even though the tides were strong.

Back fishing: It was 16.05 when the vessel left port with eight crew members. The northerly wind had cooled the sea and now the anchovy shoals were denser. Searching with the echo-sounder the skipper found a good shoal and gave the order to shoot the net. It was a race with other boats as the first vessel to land would achieve the best prices for the anchovy. At 18.00 the small boat was released and the vessel circled the shoal with the net. It was a big shoal and the skipper was pleased that he had an extended net to be able to contain it. However, he did not appreciate the depth of the shoal.

Hauling: At 18.15 the net hauler was started, hauling in the net with the crew laying it out for stowage on the port side. The small boat was towing the vessel off the net from the port side and the tide was running from the north.

Net in propeller: After several minutes the net fouled the vessel's propeller but this was not immediately noticed as the strong tide was affecting the vessel. Eventually the net stopped the propeller, stalling the engine. The vessel's head turned to port and the vessel was being pushed sideways by the tide. The skipper ordered the small boat to change the direction of the vessel but without success.

Load too big: The catch in the net was too big and a large load was being placed on the boom which suddenly failed. The vessel heeled to starboard and the net already stowed on the port side slid to starboard, increasing the heel. The force of the tide overcame the stability of the vessel and it capsized.

No lifejackets: The skipper and crew did not have time to put on lifejackets and they all ended up in the sea with nothing to keep them afloat. However, the small boat had let go its tow rope and hurried across to pick up seven crew members.

Skipper dead: The eighth man, the skipper, was missing and has never been found.

HAZARDS

Increasing net size to achieve bigger profit also brings increased risk.

No one wearing a PFD.

Strong tide.

DEFENCES

Carry out risk assessment before and after making changes.

All crew must wear a PFD.

Ensure emergency drills are conducted regularly.

Timely rescue services.

LESSONS LEARNT

- Ensure that your vessel is up to the conditions.
- Capsizes can occur so easily in strong tide situations.
- Once power is lost the vessel is at the mercy of the tide!
- Always carefully consider the possible implications of any changes you make to the fishing gear, do not exceed capability of your vessel.
- Carry out a risk assessment of the fishing operation and identify possible hazards and how you can deal with them.
- All persons should have been wearing a personal flotation device.
- Training and drills on how to deal with emergency situations must be conducted regularly.

DON'T LEARN THE HARD WAY

EVERYONE, EVEN FISHERMEN, NEEDS REST!

Fatigue can kill. Even if no one is killed or seriously injured, the consequences of being too tired and having an accident, or falling asleep in the wheelhouse can be very expensive and a great deal of fishing time can be lost. A few hours spent sleeping can be a good investment.

INCIDENT AND CONSEQUENCES

Dilemma: The skipper of a 10 metre 'rule beater' prawn trawler was a witness in a court case and had to be in court during the day. However, the prawn season had started and he needed to be at sea fishing whilst good earnings could be made. The skipper was employed by the vessel owners and there were three crewmen in addition to the skipper. Two of the crewmen were foreign nationals and the third was the skipper's son-in-law.

Time pressure: In order not to let anyone down, the skipper decided to attend court in the daytime and go fishing at night. He was managing to get around two hours sleep a day and despite being aware of the situation, the vessel owners did nothing to ease his workload.

The inevitable happened: After four days, the skipper fell asleep in the wheelhouse as the vessel was returning to harbour at the end of an overnight trip. The crew were all in the shelterdeck processing the prawns, the autopilot was on and the vessel steamed across the fairway to the port — one used by high speed ferries — to strike a well marked isolated rock about half a mile from the harbour.

No one hurt just major cost: Luckily, no one was injured and the vessel lodged itself in place on the rock. The vessel was seriously damaged and the repairs meant that it was out of service for weeks.

HAZARDS

Excessive workload resulted in fatigue.

The fishing season and owner put too much pressure on the skipper.

No watch alarm fitted.

DEFENCES

Adequate rest must be part of your checklist plan, before any fishing trip.

All crew must wear a PFD.

LESSONS LEARNT

- Fatigue is something that cannot be ignored. Cumulative fatigue builds up and everyone on the vessel is placed at risk.
- A watch alarm may have prevented the incident but is not a substitute for adequate rest.
- The vessel owners were aware of the pressure on the skipper and yet they let him continue to fish doing nothing to ease his workload. A relief skipper could have been employed.
- Lack of rest cost a lot in vessel repairs and lost fishing time. It could very easily have cost lives.



DON'T LEARN THE HARD WAY

BEWARE OF THE BIGHT!

Shooting pots is really dangerous.

Keep yourself clear of the rope 'snaking' across the deck!

INCIDENT AND CONSEQUENCES

Caught by the rope: Two crewmen had just starting to shoot a string of pots, when one of them got his foot caught in a bight of rope. As the man was being pulled towards the vessel's side he shouted out and the skipper in the wheelhouse quickly put the vessel into astern to take some weight off the rope. This enabled the man, who was in real danger of being dragged overboard, to be grabbed by the other crewman. The latter was then able to free the rope from around the man's foot as the skipper manoeuvred the boat to keep the weight off the pot rope.

Injured but safe: The man badly bruised his foot and had to be airlifted off the vessel to receive medical attention. Neither of the men (on the deck) was wearing a personal flotation device at the time of the incident.

HAZARDS

No separation between the rope and crew.

No one wearing a PFD.

DEFENCES

Skipper must keep visual contact of all operations on deck.

Risk assessment to consider safeguards on deck (a barrier between the rope and crew should have been installed).

All crew must wear a PFD when working on deck.

LESSONS LEARNT

- This fisherman lived to tell the tale, having been caught in a bight when shooting.
- The quick reactions of the skipper and crewman saved his life.
- Plan the operation on the vessel to separate the crew members from danger.
- Have a plan of action of what to do in such emergency situations.
- Personal flotation devices should be worn working on deck.

DON'T LEARN THE HARD WAY

CHAIN OF EVENTS OR PERHAPS, CHAIN OF FAILURES?

Under bad sea conditions there is no room for failures. Engine failure may lead to flooding, capsize and death.

INCIDENT AND CONSEQUENCES

Returning from a fishing trip in bad sea conditions the engine failed and all power was lost.

Capsize: Lacking power, the vessel drifted broadside on to the waves, rolling heavily and taking on board large quantities of water that could not be pumped out. As the amount of water exceeded the vessel's stability, it capsized.

Drowning: Of the four men on board only ONE managed to swim ashore, the other three drowned. No one wore lifejackets and two of the three lifebuoys that the vessel carried were lashed in position and did not float clear!

HAZARDS

No maintenance plan for the engine.

No means of anchoring.

No one wearing a PFD.

No method of using sea anchor to bring head up into the wind.

DEFENCES

Have a schedule for engine maintenance and implement it.

Have a liferaft and lifesaving equipment on board.

All crew must wear a PFD.

LESSONS LEARNT

An initial failure of the engine led to a more serious situation which resulted in three fatalities. Perhaps the first failure was engine maintenance resulting in engine failure. Some lessons to consider are the following:

- Maintain the engine and associated equipment regularly.
- All persons must wear a personal flotation device.
- An anchor or drogue should be available and ready to deploy.
- Ensure that freeing ports are kept clear and all watertight doors and hatches are closed.
- Have on board and be trained in the use of an emergency pump.
- Carry a liferaft and other lifesaving items.

DON'T LEARN THE HARD WAY

CONTROL SWINGING LOADS

Suspended loads, when not secured, may cause a severe accident, even in fair weather!



IV-1. Swinging Bag (Francisco Javier Vazquez Alvarez © European Union).

INCIDENT AND CONSEQUENCES

A stern trawler, 14 m long, with a three man crew, was fishing for Norway lobster 20 miles from the coast. Calm Conditions: Late in the afternoon in June with very calm sea conditions, the crew were hauling for the last time that day. The skipper was in the wheelhouse from where he controlled the overhead net drum and the two crewmen were on deck to handle the trawl. As it was apparent that there was only a small catch (about 150 kg), the trawl was simply wound onto the net drum and the bag (the cod end) suspended above the deck from the net drum. While the bag was hanging between the drum and the fishing deck, one of the two crew members moved in to release the cod end knot in order to empty the catch on the deck.

The unexpected: The sea was glassy and there was practically no rolling, but the bow wave from a passing trawler caused unexpected sudden movement of the vessel and the bag of fish swung into the man knocking him backwards. He hit his head severely on the bulwark which knocked him unconscious. He was subsequently diagnosed as having suffered cranial trauma.

HAZARDS

Unexpected wave from a trawler passing nearby.

DEFENCES

Warn those operating on deck about any passing vessel.

Wear PPE and PFD.

LESSONS LEARNT

- Before departure secure any load that can move as a result of vessel motion.
- Install a suitable means of restricting the swing of the bag.
- A system, such as a hook with a sliding gaff, allows opening the cod end from a distance.
- In heavy weather, lower the bag to the deck before opening it.
- When working on the deck of a trawler or dredger, always wear a safety hat that will protect your head should you fall or are hit by anything.
- In fair weather, the helmsman needs to warn the crew of possible sudden vessel motion caused by a passing vessel.



DON'T LEARN THE HARD WAY

EMERGENCY STOPS AND LOCAL CONTROLS

If the operator cannot clearly see the crewmen working near the net drum, a local control or an emergency stop should be installed in a location where it can be easily reached by the persons involved.

INCIDENT AND CONSEQUENCES

The vessel, a 14 m long stern trawler with a shelter deck, manned with a crew of five, had been fishing for two days when an incident occurred at 6 a.m. just before sunrise.

Young crew member: The skipper, from the bridge, was controlling the net drum, hauling the trawl in. The four crewmen were on the fishing deck, two each side of the net drum, guiding the trawl into the drum. A young crewman, with only two month's experience, was on the port side with another crew man. It was not considered that this was a particularly difficult or dangerous task and so no thought was given to the lack of experience of the young crewman.

Caught in the mesh: The foot rope and headline of the trawl were arriving on the drum when, pushing the net across, the young crewman got his hand caught in a mesh, which was very tight under the strain: he was thus dragged by the net towards the drum.

Not aware: The skipper, due to the noisy environment did not hear the shouts and with the poor visibility he had over the fishing deck, did not immediately stop the drum. As a result, the young crewman had his arm broken.

HAZARDS

Poor visibility from control position.
Noisy environment.

DEFENCES

Set up a local emergency stop.
Provide suitable training and warn of dangers.
Monitor and assist the work of inexperienced crew.
Put in place clear communications between wheelhouse and the deck crew.

LESSONS LEARNT

Concerning the vessel:

- If the control of the net drum is from the wheelhouse, there must be good visibility of the crew members handling the fishing gear.
- Good communication should exist between the wheelhouse and the deck.
- If visibility from the wheelhouse is not good, a duplicate control should be located near the net drum where an operator will have good visibility.

Concerning the crew:

- The crew should not handle the nets too close to the net drum; if such intervention is needed, assign an experienced crewman for it.
- An emergency stop should be located where it will be easily reached by the persons involved in handling the net.
- The capacity of the drums should be adequate for the nets stored on them.
- Noise and lighting aspects should be fully considered at the vessel design stage.
- Instruct and convince the crew that, in terms of safety, there are no minor tasks in fishing gear operations.

DON'T LEARN THE HARD WAY
MAKE SURE THAT YOU HAVE ENOUGH FUEL BEFORE YOU SET OUT!

Check your fuel and make sure it is sufficient for your intended trip with spare capacity just in case something occurs and you need to extend the trip. Ensure that the engine will not run out of fuel when you need it.

INCIDENT AND CONSEQUENCES

Two qualified divers working in a nine meter boat engaged in the gastropod fishery and hand harvesting rapa whelk through surface supplied air. They had a strenuous life style but the season was going well, and the previous day they had landed 300 kg of gastropod at the port. The next day they met and left the port by 7 a.m. to travel to the fishing ground, about three hours from the harbour.

The fuel in the tank was enough for one day and there was also a reserve tank on deck, which was not connected to the engine. They anchored the boat and prepared for diving.

Only one man dived at a time, the other supplied the air. Strong winds were expected that day, however, after fishing some hours both men decided to fish in a rockier place near a foreland.

More fuel burnt: It took three hours to get there and they dived in turns. By 17.35 it got cloudy and their location was highly exposed to wind. The man on the vessel signalled with the air hose for the man diving to come up. At the same time the engine stopped, as it had run out of fuel, and the empty tank allowed air into the fuel line. He filled the tank with the reserved fuel but the engine could not start because the fuel line needed bleeding.

Anchor dragging: The diver returned to the surface and climbed back into the boat which was now being driven ashore towards the rocks. They tried to shorten the anchor but the tide started to run strongly causing the anchor to drag and the vessel hit the rocks. They managed to transmit a MAYDAY on the VHF and jumped into the sea to swim for the shore. Both men escaped unharmed!

HAZARDS

Changes to the fishing trip without proper consideration to the engine's fuel.

DEFENCES

Set up a fuel level gauge.

LESSONS LEARNT

- Check your fuel and make sure the engine will always have a supply (many emergency calls are from vessels that ran out of fuel or had contaminated fuel).
- Check and clean fuel filters regularly.

11. DREDGE EMPTYING, REACHING TOO FAR! | FALL OVERBOARD

DON'T LEARN THE HARD WAY

KEEP YOUR FEET ON THE DECK

The bulwarks and railings effectively protect you from falling overboard only when all operations can be carried out with both your feet on the deck!

INCIDENT AND CONSEQUENCES

Work fast fishing: A 13 m trawler/dredger with a three man crew was engaged in scallop fishing in St Brieuc Bay. According to fisheries management in this area, fishing is authorised for a very short period of time each day, 45 minutes only, resulting in very hasty dredge hauling/emptying/shooting sequences.

Dredge stows on rail: In December, late in the morning, the vessel was towing two 'Britton' dredges. These dredges consist of a metal frame carrying teeth that rake the seabed, followed by the bag that contains the scallops. After being hauled to the surface, the dredge was brought to the side of the vessel and stowed with the rake's teeth on the bulwark top and the bag of scallops outside the bulwark.

Reach a long way: To empty the catch the practice was for a crew member to climb onto the dredges to hook a lifting wire on the bottom of the bag in order to lift it up to discharge the catch onto the deck. Whilst doing this the man was not secured, both feet were without any foothold. On this particular morning, an unexpected movement of the vessel caused the man to fall overboard.

No one hurt but lucky: Fortunately, whilst handling the dredges, the engine was declutched and the crewman was wearing a PFD. Hence, his colleagues managed to lift him onboard quickly and the incident had no dramatic consequences.

HAZARDS

No safe means of emptying the bags.

DEFENCES

Provide adequate means of lifting the bags for emptying.
Wear a PFD.

LESSONS LEARNT

- Use dredges that empty from the bottom, where the vessel and lifting gear design make it possible.
- Where only dredges emptied by the top can be used, a lifting rope should be rigged from the bottom of the bag to an accessible point at the top of the dredge such that the lifting wire can be safely hooked in.
- Always wear a suitable personal flotation device, and a man overboard recovery plan should be in place on the vessel.
- Fishery management requirements that generating strong time pressure resulting in exceedingly hasty operations should be avoided.

DON'T LEARN THE HARD WAY
FOLLOWING CHANGES, IS YOUR VESSEL STILL STABLE?

Adding weight above deck such as a gantry, a bigger winch or a net drum will reduce your vessel's stability. Similarly, carrying fishing gear on deck and especially if it is stacked up high, will lessen the ability of your vessel to resist capsize. Consider at all times the stability of your vessel and do not allow excessive weight to build up above deck.

INCIDENT AND CONSEQUENCES

Small vessel working pots: An 8.29 m GRP vessel, rigged for both potting and trawling, with a crew of three, was working pots off the south Irish coast. The weather was reasonable, force 4-5 with a slight to moderate sea state. At about 15.00, having hauled three strings of pots and carrying them on board, the vessel was underway to shoot the pots on fresh grounds.

'She's listing': In addition to the three strings of pots stacked three high on the port side there were around nine boxes of crabs stacked two or three high on the starboard side. One of the crew shouted out a warning, 'she's listing' and the skipper disengaged the engine and came out of the wheelhouse. The vessel was listing to port and the crew grabbed a few pots and threw them over to the starboard side in an effort to right the vessel. They had only moved about four pots when the crewman shouted a further warning, 'get off, she's going' and he grabbed two personal flotation devices (PFDs) from the wheelhouse for him and the skipper. The third crew member was already wearing a PFD.

Rolled over: The crewman wearing the PFD held on to the pot hauler on the starboard side as the vessel rolled over to port and was able to climb onto the hull without getting wet. He recalled seeing the skipper and the other crewman in the vicinity of the wheelhouse as the vessel capsized, both had the PFDs over their arms. The crewman appeared on the surface and was helped onto the upturned hull but the skipper was nowhere to be seen.

Four hours on the hull: The two crewmen sat on the hull for about four hours, the vessel gradually sinking stern first. At around 19.00, they could no longer remain on the hull and had to enter the water. Both were wearing their PFDs and they tied a rope between themselves and used some floats from the nets for extra buoyancy. The liferaft that the vessel carried did not deploy to the surface during this time.

Search and rescue: At 17.54 the local lifeboat station informed the Maritime Rescue Coordination Centre that the vessel was overdue and a helicopter was sent to search and a PAN was broadcast at 18.08. The PAN was upgraded to a MAYDAY at 18.41 and a full search and rescue mission commenced concentrating on the area where the vessel was last seen.

Found by fishing vessel: At 21.34 the two men in the water were seen by a fishing vessel and picked up. They were then transferred to a lifeboat and eventually to hospital by ambulance. Unfortunately, one of the men, who was in a very serious condition when picked up, did not survive.

Throughout the night: The search for the skipper continued throughout the night but he was not found. The wreck of the vessel was located by the appearance of a slick and debris on the surface.

Local diver killed: Tragically a very experienced local diver lost his life during a diving accident when searching for the skipper two days later.

Vessel recovered: A salvage operation recovered the vessel to be able to investigate the incident.

HAZARDS

Changes affecting the stability of the vessel without the approval of the authorities.

Excessive number of pots.

No hydrostatic release for EPIRB and liferaft.

Bilge alarm disconnected.

DEFENCES

Assess the vessel's stability if changes are made.

Ensure lifesaving equipment can be easily released.

Wear a PFD.

Ensure the bilge alarm is working.

LESSONS LEARNT

Concerning the vessel:

From the investigation the following was concluded.

- The cause of capsizing was due to a combination of factors:
 - Overloading the vessel with heavy winch, nets, trawling equipment, a large number of pots and the catch.
 - The vessel had a very poor stability profile at the time of the incident.
 - The crew did not detect water accumulating in the machinery space as a result of operational leakages because the bilge alarm had been disconnected.
- Changes had been made to the vessel after the survey for compliance with the Irish Code of Practice. These changes, however, were not notified to the surveying authority and hence a hazardous stability condition existed.
- The rapid capsizing gave no time to send a radio message, launch the liferaft or operate the EPIRB.
- Had the EPIRB and the liferaft released more lives may have been saved.
- All of the crew should have devices when working on deck.

**DON'T LEARN THE HARD WAY****FIRE PRECAUTIONS, ARE YOURS ADEQUATE?**

Is the electrical equipment and wiring in good order? Do you have smoke and fire detectors installed? Have you the provisions and training to fight a fire and take the right actions?

INCIDENT AND CONSEQUENCES

An 11.6 metre wooden creel boat (potter) was moving creels to a new area and having already hauled and stowed 370 creels on board was preparing to pick up the last string of 90 creels when fire was discovered in the engine room.

No alarm system: The vessel was not equipped with fire or smoke alarms and the fire was only discovered when smoke seeped into the accommodation from the engine room. The skipper opened the engine room hatch in the wheelhouse and was confronted with thick acrid smoke that immediately filled the wheel house.

Accommodation hatch left open: The skipper immediately shut the engine room hatch and the two crew members evacuated the accommodation via the wheelhouse but left that hatch open allowing the wheelhouse to continue to fill with smoke. This prevented the skipper from being able to use the VHF radio or to access the emergency flares.

Abandon ship: The skipper was not sure about the extent of the fire but considered it to be beyond his control. He was very concerned about the gas bottles that were stowed on deck above the fire but he could not remove these because of all the creels that were stacked high around the wheelhouse. The liferaft was stowed on top of the wheelhouse and the crew had to climb on top of the creels to lift it down. Fortunately the sea was very calm and they were able to do this without falling. The lifejackets were stored in the accommodation and could not be accessed due to the smoke.

Coastguard contacted: The skipper tried again to enter the wheelhouse to use the radio but it was impossible due to the smoke. Fortunately, he was able to use his mobile telephone to contact the Coastguard and to tell them that he and the two crew members were taking to the liferaft.

Recovered by a fishing vessel: The Coastguard alerted vessels in the area and a nearby fishing vessel was able to quickly pick up the three men. The creel boat was towed to harbour where it was met by the local fire brigade who boarded the vessel and extinguished the fire.

HAZARDS

Poorly maintained electrical system.
 No fire or smoke alarms.
 Hatches left open.
 Restricted access to liferaft.
 Sprinkler system not operable.
 Crew unfamiliar with the location of fire fighting equipment.

DEFENCES

Ensure that the crew are aware of what to do in emergencies and carryout drills.
 Implement a proper maintenance plan.
 Wear a PFD.

LESSONS LEARNT

- Investigation indicated that the fire was probably caused by faulty electrical equipment and that overload had caused cabling to catch fire on the wooden bulkhead between the engine room and the accommodation.
- The electrical systems on the vessel were considered to be in a poor state.
- Had a fire/smoke detection system been installed in the engine room and accommodation, the fire would probably have been discovered sooner and there may have been time to fight the fire.
- Leaving the accommodation hatch open allowed smoke to continue to fill the wheelhouse and this prevented access to the radio.
- The use of a mobile telephone to alert rescue services cannot be relied upon as often there is no available signal.
- A water sprinkler system was installed in the engine room but the skipper and crew were not familiar with its operation.
- The sprinkler was fed by the deck wash pump with a valve to select the sprinkler or deck wash. However, the handle for the valve was kept in the accommodation and indeed, the valve was found to be seized in the deck wash position.
- The quantity of creels stacked around the vessel prevented access to the sprinkler valve, the gas bottles and made it very difficult to launch the liferaft.
- The number of creels being carried on the vessel and stacked up high would have seriously compromised the stability of the vessel.
- Lifejackets should be store where they will be readily available in an emergency.
- Personal Flotation Devices (PFDs) should be worn when working on deck.
- The skipper and crew were new to the vessel and were not familiar with the provisions on the vessel. They should have discussed together possible emergency situations and ensured that they knew exactly what equipment was available and where it was located.
- Drills should have been held to ensure that everything was in working order and all persons knew what to do.
- Risk assessments should have been carried out.



DON'T LEARN THE HARD WAY

**NO ONE TO HELP — IT'S DOWN TO YOU!
BE PREPARED AND DO IT RIGHT!**

Working single-handed can never be considered safe but if you really have to do it, prepare and equip your vessel to make it as safe as possible.

INCIDENT AND CONSEQUENCES

A 9.98 m wooden vessel was trawling for prawns when the very experienced skipper who was working the vessel single-handed became caught in the winch.

Layout: The vessel had a forward wheelhouse with the winch and a net drum mounted above it positioned aft of the wheelhouse with the controls on the forward side of the winch. A separate small diesel engine powered the winch.

2nd Haul: The skipper was still sorting the catch from the first haul when he began hauling again and having set the winch hauling he returned aft of the winch to finish boxing the catch.

He lost his balance over a fish box and fell onto the port warp, the sleeve of his oilskin jacket caught in a joining shackle on the warp and he was dragged into the winch. The sleeve from the cuff to the neck was trapped in the warp on the winch. He was pinned to the deck beneath the winch but fortunately the load on the winch stalled the small engine driving it leaving the skipper in great pain trapped under the winch.

Nine hours passed as he lay trapped. It was getting dark and he realised that the vessel may drift onto rocks. Help was not going to arrive and so he desperately renewed his efforts to free himself and eventually managed to rip his oilskin jacket freeing first his head and then the rest of his body. He had shoulder, facial and rib injuries but he managed to make it into the wheelhouse and call for help.

A lifeboat with a doctor arrived and the skipper was soon in hospital. He subsequently made a full recovery.

INCIDENT AND CONSEQUENCES

A 6.24 m potting vessel was being operated single-handed by a skipper with 17 years experience at this type of fishing. The vessel was working on the east coast of Scotland and was using fleets or strings of 20 pots. The vessel had left the harbour at 07.30, for a normal days fishing, the skipper had spoken to his wife over the VHF at 09.30 and that was the last contact with the vessel.

Wife concerned: By late afternoon when the fisherman had not returned his wife contacted another fisherman to ask if he had any information. After trying to raise the vessel on the VHF and on a mobile phone, the coastguard was then alerted.

A light spotted: A fisherman reported that he had seen a light in a position to the east which he was going to investigate and the lifeboat was also directed to the location. It was the missing vessel but there was no one on board.

Anchored by the pots: A pot was jammed in the port gunwale forward of the wheelhouse with the rope from the pot leading down into the water. The fisherman took the rope over to his vessel and hauled the 17 pots that were in the water. However, the skipper's body was not entrapped in the rope.

Search continued: The vessel was taken back to harbour and the search continued for the skipper until 23.00 and resumed the next day until it was terminated at 16.00.

The skipper's body has not been recovered. He did not normally wear a lifejacket or any form of personal flotation device.

LESSONS LEARNT

- Both of these incidents highlight the greatest danger of operating a vessel single-handed; no one to help and no one aware that you need help. You are on your own!
- The Skipper trapped under the winch was very lucky to be alive to tell what did happen.
- Setting the winch to haul and then continuing to sort the catch was to save him time but it placed him in a position in which he could not quickly reach the controls if necessary.
- The deck was cluttered with boxes to sort the catch and this caused him to lose his balance.
- With the second incident we do not know what happened, it is suspected that the Skipper fell or was knocked overboard by a pot when shooting.

ALWAYS FISH WITH SOMEONE ELSE, BUT IF YOU DECIDE TO FISH ALONE, PLEASE TAKE ALL SAFETY PRECAUTIONS.

Module V • Risk Assessment

1. INTRODUCTION
2. BASIC CONCEPTS
3. FIVE STEPS TO ASSESS THE RISKS ON YOUR VESSEL
4. SAFETY POLICY FOR VESSEL SAFETY
5. WRITING A RISK ASSESSMENT
6. GUIDANCE FOR A MINIMUM RISK ASSESSMENT



1. INTRODUCTION



RISK ASSESSMENT

Why is it necessary?	In order to make work situations safe it is necessary to think of possible dangers or hazards and try to prevent or protect against them. This is known as risk assessment and persons are doing it informally all the time, making judgements, 'weighing the job up'. Formal risk assessment in writing is required by the European Framework Directive and countries have introduced legislation for risk assessments to be carried out in all workplaces including fishing.
Who is responsible for risk assessment?	In a work situation where persons are employed the employer is responsible to ensure a safe workplace and must carry out risk assessment to check and verify that the workplace is safe.
Who is responsible for risk assessment on your fishing vessel?	In fishing, the workplace is the vessel and the skipper will often be the employer. The skipper may not be the owner of the vessel, in which case it will be the responsibility of the owner to ensure that risk assessment is carried out. The skipper, as the person responsible for the operation of the vessel is the most suitable person to do the risk assessment but the person with the control of the management of the vessel, the owner, has the overall responsibility.
Is a share fisherman an employed person?	In many instances, fishermen work on a vessel on a basis of receiving a share of the vessel's earnings. They can be classified as employees by the national regulations of EU Member States for the purpose of health and safety. Irrespective of their classification under national legislation, it is good practice to consider them as employees for health and safety purposes and therefore they should be covered by all the preventive and protective measures put in place by the person/organisation that has the controlling interest in the vessel. That person/organisation must ensure that risk assessment is carried out.
Single-handed fisherman (Self-employment)	If you own the vessel and work it by yourself you do need to carry out a risk assessment. However, if you are operating the vessel for another person who owns the vessel, that person is responsible for your workplace, and a risk assessment needs to be carried out. Again, if it is your vessel and only you work on it, a risk assessment is mandatory for your own safety and that of anyone that may be involved with maintaining it or simply walking across it to another vessel. If working alone, it is essential that you consider safety provisions (see Module I, Section 18).



THE BASICS OF RISK ASSESSMENT

Risk assessment can be complicated or it can be quite simple and meaningful, whatever is appropriate to the situation. Fishing is dangerous because the workplace is on the sea but a risk assessment only needs to be simple and understandable. In a simple risk assessment various terms are used as below.



HAZARD

ANYTHING THAT MAY CAUSE HARM

Almost anything can be considered a hazard but a sensible approach will enable you to decide on real hazards and not the extreme possibilities.

This may be:

- An obstruction that persons could trip over;
- A slippery area of deck;
- The lack of a hand rail;
- Hatchway left open;
- Winch operator cannot see crew members handling the fishing gear;
- The possibility of falling overboard;
- Handling the catch;
- Poor lighting in the engine room;
- Falling asleep when in control of the vessel;
- High noise levels;
- Inexperienced crew member;
- Carrying a lot of gear on deck.



RISK

A COMBINATION OF HOW LIKELY HARM IS TO OCCUR AND HOW SERIOUS IT WOULD BE

Something that has very serious consequences that will result in permanent injury or death, even though this is unlikely to happen, is a more serious risk than something that is likely but will not cause too much harm. You need to be aware of the serious risks.

**CONSEQUENCE****HOW COULD THE HAZARD CAUSE HARM AND WHO MAY BE HARMED?**

Consequences can vary, a slip/trip/fall may result in a few bruises or, even death.

You need to think about what is reasonably possible; a trip near the winch could result in the person falling into the winch.

On a small fishing vessel it is likely that all of the crew will be at risk or it may just be the one person who works in a location such as the engineer.

However, a hazard on deck may pose danger to any person crossing the deck including crew members from other vessels.

**CONTROL MEASURE****WHAT CAN YOU DO TO MINIMISE THE RISK?**

What safeguards are in place? These may be:

Hand rails;

Guards;

Protective equipment;

Instructions;

Training;

Different working methods;

Improved equipment;

Professional stability check;

Etc.

**FURTHER ACTIONS****THINGS THAT YOU INTEND TO DO TO REDUCE THE REMAINING RISKS**

Having considered the hazard and the control measures (safeguards) that are in place to reduce or protect from that hazard, you need to consider if a risk still exists and does it justify further action.

**RISK ASSESSMENT - OBJECT**

The object of risk assessment is to ensure that the workplace is safe for all persons involved.

3. FIVE STEPS TO ASSESS THE RISKS ON YOUR VESSEL

STEP 1

- Walk around and make a list of hazards on your vessel.
- Check the risks presented in all modules of this guide.
- Involve your crew in identifying the hazards.

Everyone's safety should be considered

Look for the hazards on your vessel

STEP 2

- Consider all likely happenings.
- Think about any young or inexperienced crew member.

Is anyone unaware of the potential danger a hazard may pose?

Identify the consequences who may be harmed and how?

STEP 3

- Avoid risks; Evaluate all the risks which cannot be avoided.
- Adopt good practice and comply with recognised standards (e.g. national legal requirements).

Are safeguards in place sufficient and reasonable?

Evaluate the risk — are the existing control measures adequate?

STEP 4

- Write down your risk assessment and communicate it to all crew members.
- Use a simple form and follow the structure presented in this guide.

Take account of serious risks, not trivial ones

Record your findings!

STEP 5

- At a minimum review your risk assessment annually.
- Review it urgently if: changes are made to the vessel, a new fishing method is being adopted or the crew is changed.
- Write separate risk assessment for special cases (e.g. young persons, people with disabilities, pregnant women).

The sooner you review your risk assessment, the better!

Review your risk assessment and introduce changes, if necessary

4. SAFETY POLICY FOR VESSEL SAFETY

SAFETY POLICY

Developing a coherent overall safety policy is not only a legal requirement under EU legislation but is also an important preventive safety measure.

The below example shows an example policy; it is important to complete a document like this showing the vessels commitment to safety and identifying the person responsible for maintaining and supporting the Policy.

SAFETY POLICY — EXAMPLE

Health and safety policy statement

This is the Health and Safety Policy Statement for the vessel:

Our statement of general policy is:

- to provide adequate control of the health and safety risks arising from our work activities;
- to consult with our workers/crew on matters affecting their health and safety;
- to provide and maintain safe plant and equipment;
- to ensure safe handling and use of substances;
- to provide information, instruction and supervision for workers/crew;
- to ensure all workers/crew are competent to do their tasks, and to give them adequate training;
- to prevent accidents and cases of work related ill health;
- to maintain safe and healthy working conditions; and
- to review and revise this policy as necessary at regular intervals.

Signature:

Date:

RECOMMENDATIONS ON HOW TO FILL IN THE FORM

Hazard Identification: It is usually best to involve the crew in a walk around the vessel to discuss the hazardous areas about the vessel.

Risk Association: Each hazard has at least one risk but most likely many. The risk is the ways in which the Hazard can harm the crew and vessel.

Control Measures: Risk reduction is what risk assessment is all about, and the implementing of the Control Measures is the most vital part.

The controls should be considered in the following order:

Guards: These could be either physical or implied, for example a machinery guard is a physical guard and the crew having a safe area to stand whilst the gear is recovered is an implied guard.

Training and Procedures: This type of control is about making sure that everyone is working safely and have sufficient training, you could consider checklists as a control measure in this area.

Personal Protective Equipment (P.P.E.): Clothing that is worn to protect the person wearing it from harm also allows equipment to be operated in a safer manner, examples are glove to keep hands warm and functioning properly and goggles to allow the wearing to keep looking at the task in progress.

Signs: Signs are not just the ones that you read, making an area of deck a bright colour may make it obvious not to stand there. And a bright, clearly identified obstruction at head height is easier to avoid than a dark one.

Page Number: Use the book as a reference to select the recommended control measures and reference the page number in the yellow column.

Caution: Please notice that this and other forms presented in the guide do not constitute a final approach on how you must complete your risk assessment. The forms may however assist you in spotting the risks and estimating the consequences. We recommend you to adopt the forms and complete them; in accordance to your particular needs.

6. GUIDANCE FOR A MINIMUM RISK ASSESSMENT

INTRODUCTORY NOTE:

A checklist example and guidance for assessing the risks in your vessel is presented in this section. Sixteen areas/tasks/activities are exemplified (see tables below). Use the checklist and guidance to help you carrying out the risk assessment for your vessel and how you operate it.

Consider each 'Possible Hazard' and if it is not applicable use 'X'.

Once a risk assessment has been completed put a '√' in the box.

An empty box means that the assessment requires attention.

Please, take into account that it is the situation on your vessel that you are assessing and your appropriate control measures may be different to the suggestions listed within this book.

AREA	TASK	ACTIVITY
The Vessel	Wheelhouse	Trawling
The Crew	Accommodation/Galley	Potting
Emergency procedures	Engine room space	Netting/Lining/Jigging
Boarding and leaving the vessel	Catch handling	Dredging and beam trawling
Clothing	Fouled gear and gear mending	Working on the vessel
Maintenance work		

GUIDE BASED RISK ASSESSMENT

☐ Assess ☒ Done ☒ N/A	HAZARD	RISK	CONTROL MEASURES	PAGE NO.
☒	Boarding and Leaving the Vessel	Drowning — falling in the water Injury — falling from a ladder	Remain sober at all times, have others around Report defective ladders/lighting to port authority Work in groups Use of a PFD/lifejacket	37
☒	Noise	Hearing loss leading to deafness	Use of ear defenders Reduce exposure time	54
☒	Shooting (potting)	Drowning — dragged overboard Injury — caught in rope/struck by a pot	Plan a safe system of work Stand well clear of moving ropes Have a knife to hand for an emergency Use of a PFD/lifejacket	76
☒	Winches & Warps (Dredging & Beam Trawling)	Crush injury — dragged into winch Cuts/tears — due to splintered/stranded warp	Test emergency stop before use Test communications between winch controls and deck Check warp conditions for splinters/stranding Keep clear	88

GUIDE BASED RISK ASSESSMENT

☐ Assess ☒ Done ☒ N/A	HAZARD	RISK	CONTROL MEASURES	PAGE NO.
☐	Loss of Stability			31
☐	General Working Areas			33
☐	Watchkeeping			34
☐	Accommodation & Galley			35
☐	Engine room/Confined Spaces			36
☐	Boarding and Leaving the Vessel			37
☐	Fishing voyage			38
☐	Fouled Gear & Mending			39
☐	Maintenance Work			40
☐	Beach Operations			41
☐	Landing Operations			42
☐	Single Handed Working			43

GUIDE BASED RISK ASSESSMENT

☐ Assess ☒ Done ☒ N/A	HAZARD	RISK	CONTROL MEASURES	PAGE NO.
☐	Irresponsible Behaviour			46
☐	Crew Ability			47
☐	Concerns & Competences			48
☐	Young Persons			49
☐	Language and Cultural Issues			50
☐	Personal Harm			52
☐	Man Overboard			53
☐	Noise			54
☐	Exposure to sunlight			57
☐	Exposure to Cold Conditions			58
☐	Ill Health			59
☐	Stress and Fatigue			60

GUIDE BASED RISK ASSESSMENT

☐ Assess ☒ Done ☒ N/A	HAZARD	RISK	CONTROL MEASURES	PAGE NO.
☐	Personal Injuries			61
☐	Slips, Trips and Falls			62
☐	Catch Handling			63
☐	Catch Processing			64
☐	Chemical & Biological			65
☐	Fitness for Duty			66
☐	Injuries & Diseases			67
☐	(Trawling) • Winches, Warp, • Towing Chains			72
☐	(Trawling) • Bag Lifting • Net Drums Etc.			73
☐	Potting • Layout & System			75
☐	Potting • Shooting			76
☐	Potting • Hauling			77

GUIDE BASED RISK ASSESSMENT

☐ Assess ☒ Done ☒ N/A	HAZARD	RISK	CONTROL MEASURES	PAGE NO.
☐	Potting • Davit Block • Emptying & Baiting			78
☐	Potting • Catch Stowage			78
☐	Netting, Lining, Jigging • Stowage of Gear • Stability			81
☐	Netting, Lining, Jigging • Shooting Nets & Lines			82
☐	Netting, Lining, Jigging • Hauling			83
☐	Netting, Lining, Jigging • Fish Removal • Line Baiting			84
☐	Netting, Lining, Jigging • Jigging • Mechanised Systems			85
☐	Dredging & Beam Trawling • Stability • Seabed Obstructions			86
☐	Dredging & Beam Trawling • Winches • Warps			88
☐	Dredging & Beam Trawling • Handling the Gear			89
☐	Purse Seine • Auxiliary Boat			90
☐	Purse Seine • Lifting • Winches, Haulers, Cranes • Ropes and Lifting Tackle			92

GUIDE BASED RISK ASSESSMENT

☐ Assess ☒ Done ☒ N/A	HAZARD	RISK	CONTROL MEASURES	PAGE NO.
☐	Purse Seine • Catch Stowage			93
☐	Purse Seine • Vessel Stability			93
☐	Purse Seine • Free Movement on Vessel			93
☐				
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☐				
☐				

Module VI • **Additional information**

- 1 • PERSONAL FLOTATION DEVICES
- 2 • STABILITY
- 3 • FIRST AID
- 4 • WORK EQUIPMENT
- 5 • EMERGENCY DRILLS



Module VI • **Additional information**

1 • Personal Flotation Devices

1.1. INTRODUCTION

1.2. WHAT IS CURRENTLY AVAILABLE?

1.2.1. WAISTCOATS OR BODY WARMERS

1.2.2. WORK VESTS

1.2.3. BUOYANT THERMAL SUITS

1.2.4. INFLATABLE LIFEJACKETS

1.2.5. LIFEJACKETS

1.2.6. OILSKINS

1.3. FINAL CONSIDERATIONS

**YOUR
CHANCE
OF
SURVIVAL**

1.1. INTRODUCTION

PERSONAL FLOTATION DEVICE (PFD)

Is a garment or device which, when correctly worn, will provide the user with a specific amount of buoyancy which will increase the likelihood of survival. It is very common to consider that the terms lifejacket and PFD are interchangeable. However, it should be stressed that a lifejacket is designed to turn an unconscious person face up on entering water.

BUOYANCY

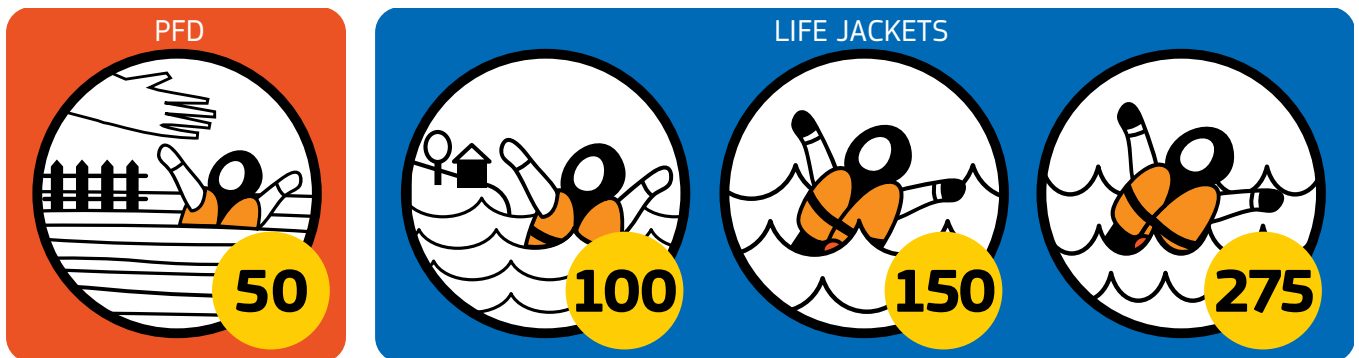
Buoyancy is measured in Newtons (N) and specifies the ability of a PFD to keep a person afloat. 10 Newtons approximately equals to 1 kilogram of flotation.

Buoyancy is mainly achieved by two means:

- 1. Inherent Buoyancy**, achieved by use of buoyant materials such as closed cell foam in the lining of a garment. The amount of buoyancy provided depends upon the volume of foam and hence, to achieve good buoyancy there has to be a large volume resulting in a bulky garment. Inherently buoyant items are likely only to provide 50-80 N of buoyancy but, it is totally reliable.
- 2. Inflatable Buoyancy**, achieved by inflating a bladder, usually by a small cylinder of carbon dioxide gas (CO₂). The inflation can be activated manually by pulling a lanyard or automatically when the device is immersed in water. Inflation can also be achieved by blowing into a mouth piece. High levels of buoyancy can be provided by inflatable devices but they do need to be regularly checked and serviced to ensure reliability.

There are four European standards for PFDs which must all carry the CE mark (EN393-399). Those standards have been recently replaced by the International Standards Organisation (ISO) and are known as ISO 12402. The diagram below shows the pictorial symbol and provides a summary of the buoyancy categories.

VI-1. Buoyancy levels for PFDs (Adapted from RNLI).



For competent swimmers near a bank or shore, or with help close to hand. Minimal bulk, but limited use in disturbed water. Cannot be expected to keep the user safe for a long period of time. Insufficient buoyancy to protect those unable to help themselves. Requires active participation by the user and is unlikely to turn a person from a face-down position in the water.

Recommended for those in sheltered and calm water. It may not have sufficient buoyancy to protect a person who is unable to help themselves and may not roll an unconscious person on to their back, particularly if they are wearing heavy clothing.

For general offshore and rough weather use. Will turn an unconscious person into a safe airway position and requires no subsequent action by the user to maintain this position.

Primarily for offshore use and by people carrying significant weights, and thus requiring additional buoyancy. Also for those wearing clothing which traps air and which may adversely affect the self-righting capacity of the lifejacket. Designed to ensure the user floats with mouth and nose clear of the surface.

1.2. WHAT IS CURRENTLY AVAILABLE?

There are many products available that can be considered a Personal Flotation Device (PFD). All of them have advantages and disadvantages which need to be considered in order to choose the PFD that best matches your work requirements.

1.2.1. WAISTCOATS OR BODY WARMERS

They are looked upon favourably by fishermen as they are easy to wear, comfortable and look just like normal garments. They have a buoyant foam lining that will provide 50-70 N of buoyancy, sufficient to keep you afloat but, will not keep you face up if you become unconscious. They typically have a zip fastener and good sized useful pockets and are modestly priced. Many skippers find them ideal for wearing in the wheelhouse but crew members working on deck may find them too hot to work in during warm weather conditions.

1.2.2. WORK VESTS

These are general industrial work vests designed for situations where persons have to work in a location where they may fall into water. Rigid foam is typically used to create a buoyancy pack worn at the front of the chest and up to 100 N can be provided. They can be low cost to purchase but are likely to be too bulky and restrictive for continuous working on a fishing vessel.

1.2.3. BUOYANT THERMAL SUITS

These suits have a major advantage over many products in that they provide thermal protection, giving greatly extended survival time and protection against 'cold shock' when suddenly entering cold water. The suits are made from heavy duty waterproof fabric with a closed cell foam lining that will provide 50-80 N of buoyancy. Velcro straps seal the suit at the cuffs and ankles to prevent cold water flushing through. The suits have a thermally lined hood and reflective tapes are usually fitted to the hood, shoulders and cuffs.

In the water the suits provide good support, the wearer floating horizontally. Swimming is easy and it is also easy to assume an upright position in the water with the mouth well clear, even in wave conditions. However, should the wearer become unconscious, they will float horizontally either 'face up' or 'face down'. For this reason it is recommended that the suits are worn with an inflatable lifejacket to ensure that the wearer is turned 'face up' and due to the lifejacket having to overcome the buoyancy of the suit, a large 275 N lifejacket is recommended.

Fishermen regularly wear these suits in cold conditions for which they are ideal. However, in warm weather they will simply be too hot to work in.

1.2.4. INFLATABLE LIFEJACKETS

What you need to know?

These are the products that most fishermen will consider as they can be worn over any clothing and are lightweight and unrestricting. However, there is a lot to consider when choosing a product for your circumstances.

Buoyancy: 150 N (ISO12402-3:2006) is normally accepted as being sufficient for the average adult in offshore conditions. 275 N (ISO12402-2:2006) is needed when heavy protective clothing is being worn or tools are being carried. Such high buoyancy would be necessary to ensure that an unconscious person wearing a buoyant thermal suit was turned 'face up' in the water.

Single or Twin Chamber: Most inflatable lifejackets can either be twin chamber, with two cylinders and mechanisms to comply with SOLAS requirements or, just a single chamber with one cylinder and mechanism. If the lifejacket is to be the only lifejacket available for a person on a vessel then regulations may require that it is twin chamber and complies with SOLAS requirements. (This may not be the case on vessels below 12 m.) If the inflatable lifejacket is in addition to a lifejacket for abandon ship purposes e.g. a lifejacket for use as a PFD, then a single chamber lifejacket is acceptable.

Twin chamber lifejackets are quite expensive and most fishermen will consider it more cost effective to have a low cost inherently buoyant SOLAS approved lifejacket for abandon ship purposes in addition to a single chamber inflatable lifejacket for use as a PFD.

Automatic or Manual: Most fishermen will wish to have a lifejacket that will inflate automatically if they are in the water. Automatic lifejackets always have a means of manual activation in addition to a mouth piece to allow the lifejacket to be inflated orally. However, it is possible to specify a 'manual' lifejacket that has to be manually activated by pulling the lanyard toggle.

Manual activation prevents the possibility of false activation due to a damp automatic mechanism or, the concern of an automatic lifejacket inflating whilst the wearer was trying to struggle out of a sinking vessel. Of course, manual activation will not work if you are unconscious!

Soluble or Hydrostatic Mechanisms: Most automatic lifejackets activate when a soluble pill (salt) dissolves on contact with water allowing a spring loaded plunger to pierce the gas cylinder inflating the lifejacket. This type of mechanism may falsely activate if it is constantly in damp conditions without being hung up to dry.

Hydrostatic mechanisms are not affected by damp at all and activate by pressure difference when immersed in water. Soluble mechanisms are likely to be used on most available products and can be easily checked and serviced by fishermen. Hydrostatic mechanisms are quite critical in their installation and have to be serviced by the manufacturer.

Covers: Are secured with press studs, Velcro or zip fastenings. The covers need to be robust to protect but also flexible to ensure that the lifejacket is comfortable to wear. For fishing, the ability to be able to keep the covers clean will be a big consideration.

Belts: Unless the lifejacket belt is securely fastened tightly to the wearer the lifejacket will simply float up above the shoulders when in the water. The buckle needs to be easy to use and effective to ensure that the belt does not work slack.

Crutch Straps: To combat the possibility of the lifejacket floating above the shoulders and not lifting the wearer's mouth clear of the water many manufacturers supply crutch straps. These are especially recommended for use with short length (highline) lifejackets that result in the belt being above the waist where it is more likely to slip upward.

Cylinder and Mechanism: A potential failure with inflatable lifejackets is the gas cylinder working loose and consequently the lifejacket fails to inflate or only partially inflates. Regular checks need to be made to ensure that it is securely tight in the mechanism. To address this problem some manufactures tighten the cylinder to a required torque, some install bayonet fit cylinders and some incorporate a plastic window in the cover to be able to view the cylinder and mechanism.

The physical activity involved in fishing subjects lifejackets to severe tests and fishermen need to be aware that gas cylinders can work loose and make regular checks on their lifejackets.

Servicing: Ideally, manufacturers would recommend a thorough check and service by themselves every twelve months. However, there is no reason why an inflatable lifejacket worn as a PFD should not be serviced by the fisherman following the manufacturer's instructions. Indeed, should it be unintentionally inflated you will need to be able to repack it. When buying the lifejacket from the supplier buy also at least one 'rearm' kit. These kits contain a replacement gas cylinder, a new soluble pill and anything else necessary to make the lifejacket usable after it has been inflated. Hydrostatic lifejackets are critical and have to be sent to the manufacturer for servicing.

1.2.5. LIFEJACKETS

What you should look for?

Comfort: Will you be able to wear it comfortably when working? Try the lifejacket on and see how it feels. Rubbing around the neck is often a problem and wearing a T-shirt with a collar will help. Another possible problem is the cylinder and mechanism digging into your chest when bending or reaching over when working.

Belt Buckle: Consider how easy it will be to fasten the belt buckle. Many lifejackets have a loop in loop type buckle but these may be quite difficult to fasten with cold hands and they require the belt to be adjusted tight after fastening. The 'snap lock' or the 'push lock' type buckles are easier and quicker and the belt will not need adjusting. Check how well the buckle and the adjuster grip the belt as the belt working loose is a common problem.

Snag Points: Look for a lifejacket with a flat profile that fits you closely and does not extend down much below the belt. The major snag point is liable to be the bead or toggle for activating manual inflation which is usually located at the bottom. With automatic inflation it is probably justified to tuck the manual inflation bead inside the covers either by parting the Velcro or, at the bottom of the zip. Obviously, you will need to pull the covers open to reach the bead if the automatic inflation failed but, this is extremely unlikely.

Fastenings: The covers will be held in place by Velcro, zips or by press studs. Velcro is very effective but once contaminated by fine sand, debris, etc. it no longer holds as effectively and the covers may keep coming open. Zips and press studs are possibly preferable in situations where the lifejacket will be subject to a lot of contamination.

Cleaning: Wipe clean covers are likely to be essential for most fishing operations.

Durability: Lightweight lifejackets with flimsy covers will not stand up to continuous wear when working as the covers will be easily ripped and the bladder damaged. For hard physical work at least the lower section of the lifejacket should be reinforced. Alternatively, compact lifejackets that are short in length and thus clear of the pot can be worn.

Light and whistle: SOLAS approved lifejackets will be equipped with a light and a whistle. A PFD does not have to meet SOLAS requirements, however, it is strongly recommended that a light and whistle are fitted.

1.2.6. OILSKINS

With built in lifejacket

A special oilskin top with an expansion pleat is available or, a jacket type top that has press studs to fasten it, is suitable to burst open giving space for the inflated lifejacket. One product, which was favoured by many fishermen in trials, replaces the braces of the oilskin trousers with an inflatable lifejacket.

The lifejacket is of a broad flat section and sits comfortably on the wearer's shoulders. Straps attached to the bib of the trousers give adjustment of the fit and the trousers act as an effective crutch strap for the lifejacket when in the water. The lifejacket and the oilskin trousers can be purchased separately so that if the trousers become damaged the lifejacket can be transferred to a new pair.

1.3. FINAL CONSIDERATIONS

Fishermen will find that, whatever product they decide to wear, it will not be totally unrestricting and problem free. All products are likely to rub around the neck so a T-shirt with a collar should be worn to protect the neck. Fishermen still drown in warm weather; in fact, most fishermen that drown do so in calm conditions.

Wearing a PFD does take effort but with perseverance it will become second nature to you and not a problem. Choose carefully from the products available to find one that suits your fishing operations and ideally, try it on with oilskins before you buy.

Inflatable lifejackets are not a 'buy and forget' item, they need to be hung up to dry after use and regularly checked for damage or, the gas cylinder working loose.

When buying an inflatable lifejacket also buy a rearm kit so that you can repack it should it inflate because of the toggle snagging or damp penetrating the mechanism. (Hydrostatic lifejackets are not affected by damp but will need to be repacked by the manufacturer if the toggle is snagged.)

You should appreciate that a product that is worn daily when working on a fishing vessel will not last forever. Always inspect your lifejacket for wear and tear before use and ensure that it is annually serviced by an approved person.

Module VI • **Additional information**

2 • **Stability**

2.1. INTRODUCTION

2.2. STABILITY HAZARDS

- 2.2.1. MODIFYING THE VESSEL OR INSTALLING NEW EQUIPMENT
- 2.2.2. OVERLOADING
- 2.2.3. WATER INGRESS AND DOWN FLOODING
- 2.2.4. TRAWLING AND DREDGING
- 2.2.5. LIFTING THE CATCH OR FISHING GEAR

2.3. FOUR STEPS TO ASSESS YOUR VESSEL'S STABILITY



**DON'T
OVERLOAD**

2.1. INTRODUCTION

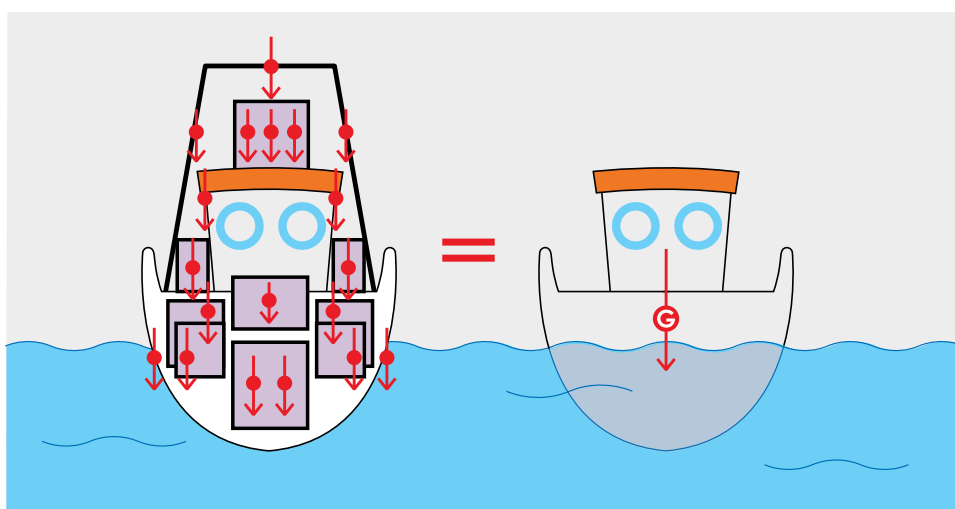
STABILITY

Stability is the ability of a vessel to return to the upright in the water.

A good understanding of the factors that reduce stability is essential to make the right decisions and take the right actions while operating your vessel at sea.

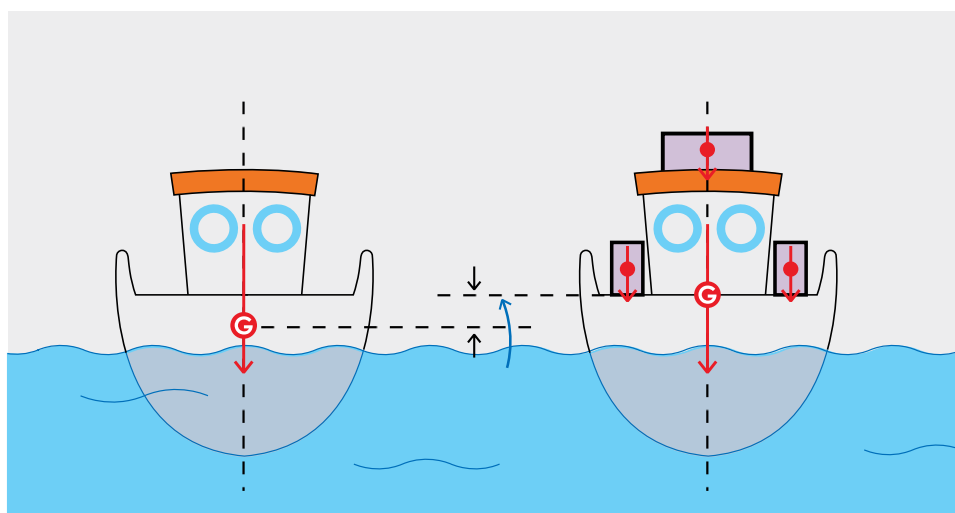
THE CENTRE OF GRAVITY (G)

Is the point at which the whole weight of the vessel can be said to act vertically down and the lower this point is the more stable the vessel will be.



VI-2. Visualising the 'Centre of Gravity'.

The centre of gravity will change with the loading on the vessel and a heavy load high on deck will result in a higher centre of gravity and a less stable vessel. A load below deck will give improved stability. The centre of gravity moves towards an added weight, away from a removed weight and parallel to a moved weight.

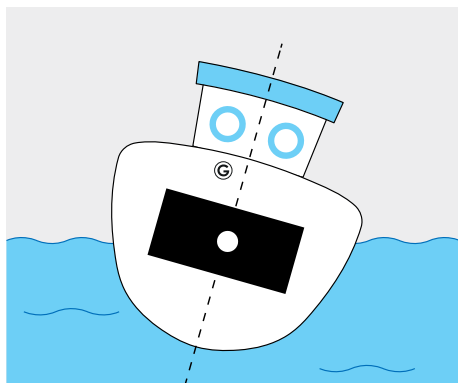


VI-3. What changes the 'Centre of Gravity'.

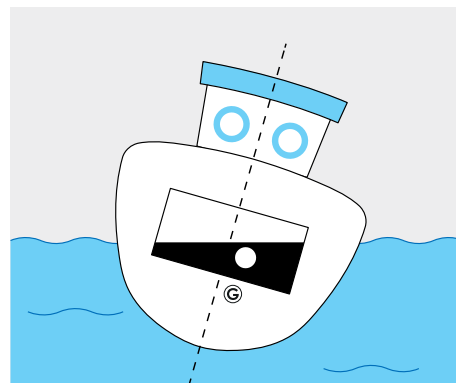
FREE SURFACE EFFECT

Occurs when liquids flow with the movement of the vessel resulting in the centre of gravity being offset, seriously affecting stability.

If a tank or container is full the contents do not move with vessel motion and the vessel's centre of gravity does not change. In a partly filled tank or container, the contents will move with vessel motion and centre of gravity of the vessel will be offset reducing stability. Fuel tanks have divisions to reduce the free surface effect.

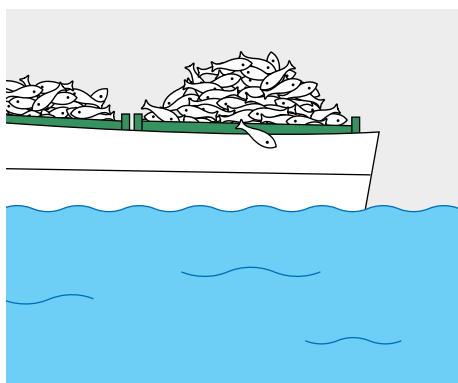


VI-4. Full tank: centre of gravity is fixed when the vessel rolls (Adapted from Transport Canada, 03/2003).



VI-5. Partly full tank: centre of gravity moves to the side as the vessel rolls (Adapted from Transport Canada, 03/2003).

Fish can flow and the free surface effect will occur if fish is in a large volume, either on deck or in the fishroom. It is essential to contain fish in boxes or to have pound board divisions to prevent the fish from flowing and destabilising the vessel.



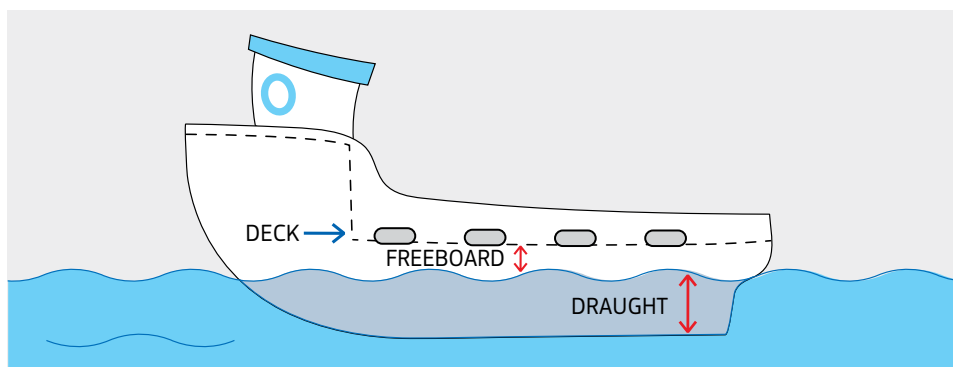
VI-6. Fish in bulk will flow giving a free surface effect (Adapted from Transport Canada, 03/2003).



VI-7. Water on deck flows giving a free surface effect (Adapted from Transport Canada, 03/2003).

FREEBOARD

Is the vertical distance between the waterline and the working deck of the vessel.



VI-8. Illustration of freeboard and draft (Adapted from FAO, Paper 517).

2.2. STABILITY HAZARDS

2.2.1. MODIFYING THE VESSEL OR INSTALLING NEW EQUIPMENT

Modifying the vessel to install major heavy items will get the centre of gravity higher and reduce your vessel's stability.

If you wish to install a new gantry or a shelter deck, or a net drum, or a power block and crane; you must first consult a qualified person or naval architect. Only they will be able to assess the impact that such an item located above the deck level will have on the vessel's freeboard; and advise you whether adjustments need to be made or new stability calculations undertaken.

Also remember that the slow accumulation of stores and equipment bring extra weight onto your vessel, so conduct regular clean out and carefully check where heavy items are stored.

Keep weights as low down as possible.

2.2.2. OVERLOADING

Fishing vessels are normally overloaded by placing too much catch in the hold or extra fish on deck. Both conditions limit stability and bring the vessel much closer to a capsize situation.

Work out how much catch you can safely carry and leave plenty of safety margins for the bad weather and decreasing fuel levels, so you can make it home safely. If you have a stability book, look at the loading conditions that have been calculated for specific amounts of fuel, stores and catch.

As little as possible should be stowed on deck and always secured to prevent it sliding. In static gear fishing when pots or nets have to be taken to new grounds there is always a temptation to stack gear up high to be able to carry as much as possible.

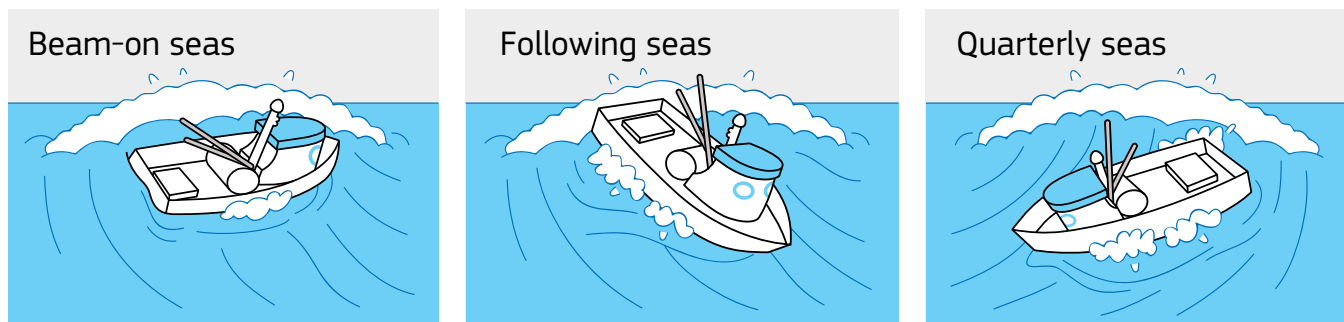
2.2.3. WATER INGRESS AND DOWN FLOODING

In a situation of heavy seas, a wave on deck can introduce many tonnes of water and produce a free surface effect. It is therefore critical to move water off the deck as quickly as possible. Freeing ports (scuppers) are vital for removing shipped water and reduce the risk of capsize.

Another flooding situation occurs through valves and pipework in the engine space or down flooding through hatches, doors and vents.

Some measures to avoid this hazard are:

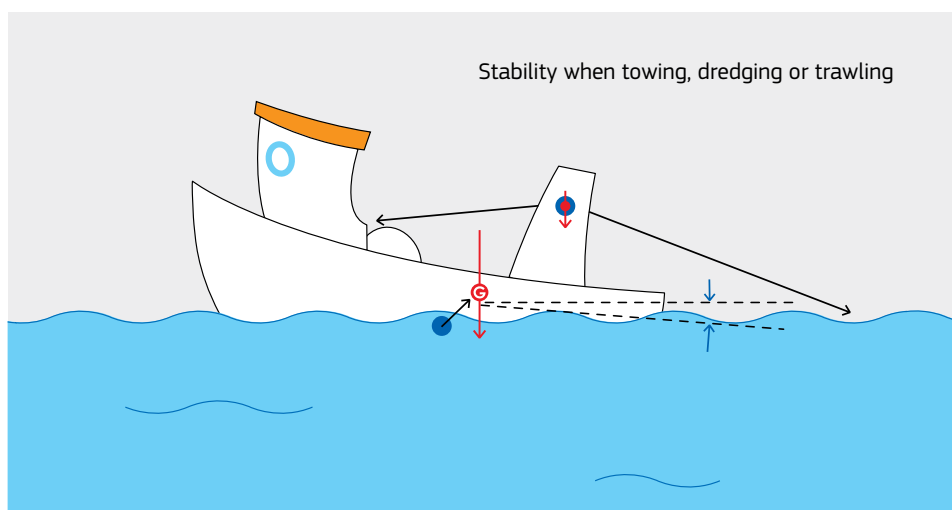
- Avoid conditions where breaking waves or following seas could cause the deck to be swamped.
- Keep freeing ports open and free of obstructions.
- Keep all bilges and melted ice to a minimum.
- Test bilge alarms and pumps before every trip.
- Keep hatches and door closed and free of lines, wires and obstructions.



VI-9. Types of seas.

2.2.4. TRAWLING AND DREDGING

Trawling and dredging require heavy gear to be lifted. Great care must be taken as the tension in the warps, while trawling or dredging, may dramatically reduce the freeboard and raise the centre of gravity.

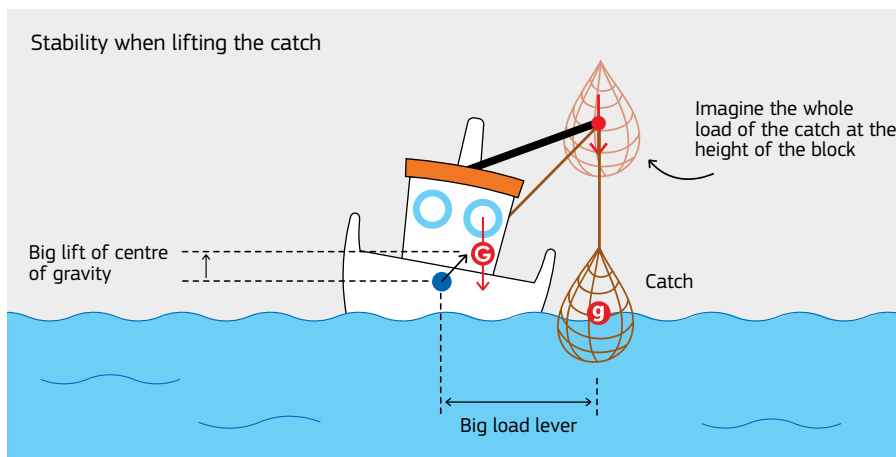


VI-10. Load in warps affects stability.

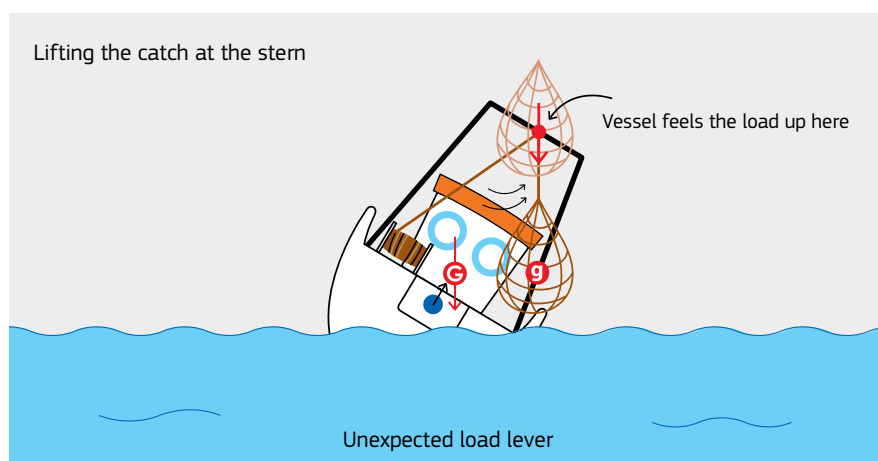
2.2.5. LIFTING THE CATCH OR FISHING GEAR

Lifting the fishing gear or the catch aboard the vessel can seriously reduce stability. It must be appreciated that when lifting from a derrick, once the item has been lifted clear of the water, its full weight is acting from the block at the top of the derrick. Thus, the weight is high up and is also offset to the vessel's side causing the vessel to heel.

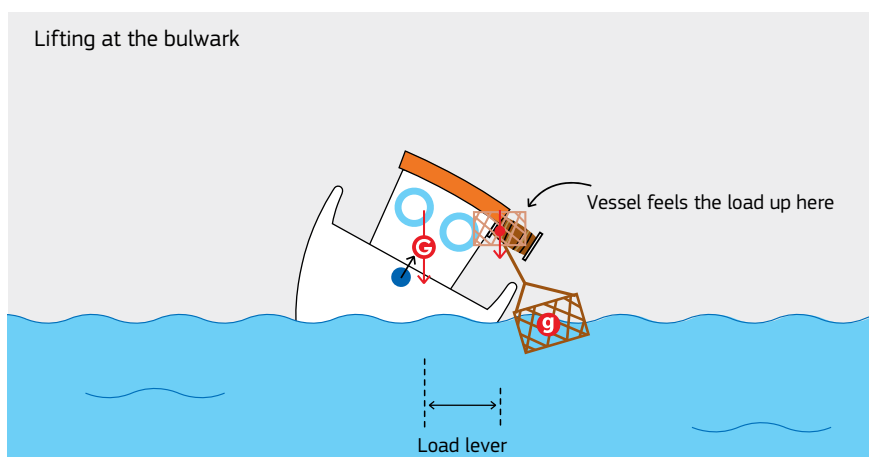
Before you lift, think about the condition of your vessel, the sea state and how much are you going to lift.



VI-11. Lifting from derrick.



VI-12. Lifting from stern gantry.



VI-13. Lifting from side.

2.3. FOUR STEPS TO ASSESS YOUR VESSEL'S STABILITY

STEP 1

Consider each factor that can contribute to a stability incident, such as:

- Watertight integrity;
- Free surface;
- Freeboard;
- Loading;
- Fishing operations;
- Other.

STEP 2

Gather all technical data that is available for the vessel such as:

- Lines plan;
- General Arrangement drawing;
- Stability book,
- Records of modification work;
- Vessel registration details;
- Capacities of fish hold, fuel tanks, water tanks;
- Ballast installed.

If a stability book is not available you should consult with a naval architect who can use all available information to calculate the vessel's stability. If the information available is not sufficient, the naval architect can conduct a 'roll test' to assess the level of stability.

STEP 3

List the important concerns that apply on your vessel:

- **Watertight integrity/down flooding points:** What areas on your vessel will be critical and could allow ingress of water? e.g. Doors, hatches, scuttles, skylights, vents through hull fittings etc. What procedures and maintenance can you put in place to prevent water ingress?
- **Free surface:** Where on your vessel could free surface be a problem? e.g. water trapped on deck, fish in bulk on deck, water in the bilge, fuel tanks.
- **Freeboard:** What factors could reduce the vessel's freeboard and do you have limits of the freeboard level technical data? e.g. consider the freeboard at the stern, amidships and the bow and be aware of the minimum level.
- **Loading:** Are loading limits given in any available stability information? Are locations specified for the stowage of gear? Loading on the vessel, either in gear carried, fuel, stores and fish caught must not exceed the minimum freeboard level.
- **Fishing operations:** Consider which operations when fishing will have a significant effect on the vessel's stability and list any procedures and actions that will limit adverse effects.

STEP 4

Produce a checklist to present the important factors with respect to your vessel as a reminder of the actions and checks that must be made to ensure stability of the vessel.

Add in the column below the important points that you decided from steps 2 and 3. Enter in the procedures any instructions to be followed with respect to each point. State what work or checks need to be regularly made. Use the checklist (table below) as a reminder to all persons of the measures to be taken to ensure safe vessel stability.

KEY FACTORS	PROCEDURES		
	Before sailing	Steaming	Fishing
Watertight integrity			
Free surface			
Freeboard			
Loading			
Fishing operations			

Examples of scenarios to consider include the following:

- Leaving the port with full fuel and stores but no fish;
- Being at the fishing grounds with a full catch;
- Coming home with a full/small catch and not much fuel or stores;
- Other actual operation conditions (e.g. fishing operation).

Acknowledgment:

Some contents of the section about Stability are based on the information published by Maritime New Zealand and the Fishing Industry Safety and Health.

Module VI • **Additional information**

3 • First Aid

- 3.1. EXAMINATION OF CASUALTY
- 3.2. CALL FOR HELP — MAYDAY CALL
- 3.3. FIRST AID KIT
 - 3.3.1. BASIC FIRST AID KIT
 - 3.3.2. CATEGORY C FIRST AID KIT
- 3.4. INCIDENT FORM

**KNOW
WHAT
TO DO**

3.1. EXAMINATION OF CASUALTY

1. Look after your own safety.
2. Start talking to the casualty before you touch them.
3. Check them for a response:
 - Is the casualty **alert?**
 - Can they hear your **voice?**
 - Do they respond to **pain?**
 - Are they **unresponsive?**

To check how conscious they are, squeeze their shoulders firmly and shout to try to get a response. If they do not respond to voice or touch, pinch the ear lobe or the back of the hand to see if they respond to pain.

Unconsciousness happens when the brain's normal activity is interrupted.
It can be a life-threatening condition that needs immediate medical help.

3.2. CALL FOR HELP — MAYDAY CALL

1. Check that your radio is switched on and high power setting is selected.
2. Select appropriate channel (MF DSC, VHF DSC, VHF Channel 16 or INMARSAT).
3. Press the transmit button, and say slowly and clearly:
 - **Mayday** (repeat 3 times)
 - **This is** (repeat the name of your vessel 3 times)
 - **My Callsign / MMSI is....**
 - **Mayday** (Vessel Name and Identification)
 - **My positions is** (give latitude and longitude, or a true bearing distance from a known point)
 - **I require** (describe type of assistance, e.g. 'medical assistance')
 - **I have** (?) persons onboard
 - **Over** (this means please reply).
4. Release the transmit button and wait for a reply.
5. If you hear nothing then REPEAT the CALL.

If successful, your call will be directed to a doctor at one of the radio medical advice centres. Depending upon the circumstances and the advice of the doctor Coastguard authorities may assist in arranging evacuation.

Under existing EU minimum safety and health requirements for improved medical treatment on board vessels, applicable to fishing vessels of all sizes:

- Vessels shall carry appropriate medical kits.
- Crew shall be given basic training in medical and emergency matters.
- Medical consultation is to be made available via radio.
- A first aid manual should be carried on board.

When an incident occurs and someone is ill or injured it is vital that someone is there with the knowledge to carry out the right actions, until professional help arrives.

All crew members should attend a basic first aid training course to be able to help their crewmates when needed.

3.3. FIRST AID KIT

3.3.1. BASIC FIRST AID KIT

CONTENTS

1. Six assorted dressings
2. Cleansing wipes (for the rescuer's hands)
3. Wound wipes
4. Eye pads
5. Water based dressing
6. Two roller bandages
7. Adhesive tape
8. Surgical shears
9. Tweezers
10. Safety pins
11. Nail brush
12. Zip bag with labels in case of evacuation to hospital
13. Six calico triangular bandages
14. Eight pairs of nitrile gloves
15. Foil / survival blankets
16. Resuscitation face shield
17. Gauze swabs

3.3.2. CATEGORY C FIRST AID KIT ⁽⁴⁾

EQUIPMENT

1. Mouth to mouth resuscitator
2. Adhesive elastic bandage
3. Gauze compress
4. Disposable polyethylene gloves
5. Plasters
6. Compress bandage
7. Zinc oxide bandage or adhesive

MEDICINES

1. Heart Medicines
 - Anti-Angina Preparation
2. Gastro Intestinal System
 - Anti-Emetic
 - Anti-Diarrhoeal
3. Analgesics and Antispasmodics
 - Analgesic
4. Nervous System
 - Seasickness Remedy
5. Medicines for External Use
 - Antiseptic Solution
 - Burns Preparation
6. Antidotes

Recording an Incident

The recording of the incident is important to the emergency services. It should accompany the casualty, preferably in a zip lock bag to keep it dry. A copy may also be required for the vessels records.

The following page has a sample incident form for you to copy and keep aboard with your first aid kit.

⁽⁴⁾ The reference to category C is linked to the three categories in which vessels can be classed in accordance with the existing requirements. This categorization has an impact on the list of medical items to be carried on board.

3.4. INCIDENT FORM

1. About the person injured

Name

Gender

☐

Male

☐

Female

Date of birth

Day	Month	Year

Job title on board

Home address

Home phone number and/or mobile

Allergies?

No ☐

If Yes, give details

Under any medication?

No ☐

If Yes, give details

Medical history?

No ☐

If Yes, give details

2. About the incident

Date of incident

Time (UTC/GMT/local)

Where the incident happened? (i.e. deck, galley, engine room, etc.)

Quick description of the injury

Part of body affected and pain level

No pain ☐	Low ☐	Medium ☐	High ☐	Neck	Upper Back	No pain ☐	Low ☐	Medium ☐	High ☐
☐	☐	☐	☐	Left Shoulder	Right Shoulder	☐	☐	☐	☐
☐	☐	☐	☐	Left Elbow/Forearm	Right Elbow/Forearm	☐	☐	☐	☐
☐	☐	☐	☐	Left Hand/Wrist	Right Hand/Wrist	☐	☐	☐	☐
☐	☐	☐	☐	Left Hip/Thigh/Buttock	Right Hip/Thigh/Buttock	☐	☐	☐	☐
☐	☐	☐	☐	Left Knee	Right Knee	☐	☐	☐	☐
☐	☐	☐	☐	Left Ankle/Foot	Right Ankle/Foot	☐	☐	☐	☐

Spinal injury? Yes ☐ No ☐

Consciousness

☐ Knows name/location?

☐ Is person alert?

☐ Reacts to pain?

☐ Not responding?

Breathing

☐ Normal

☐ Distressed

☐ Fast

☐ Slow

☐ Deep

☐ Shallow

☐ Noisy

Pulse

☐ Normal

☐ Fast

☐ Slow

☐ Strong

☐ Weak

Skin

Temperature

☐ Very cold

☐ Cold

☐ Normal

☐ Hot

☐ Very hot

Colour

☐ Pale

☐ Normal

☐ Flushed

Moisture

☐ Clammy

☐ Normal

☐ Dry

When did the person last eat?

Module VI • **Additional information**

4 • Work Equipment

- 4.1. INTRODUCTION
- 4.2. HAND SIGNALS FOR LIFTING OPERATIONS
- 4.3. EXAMINATION, INSPECTION AND RECORD KEEPING
- 4.4. INSPECTION FORMS
 - 4.4.1. TRAWLER
 - 4.4.2. POTTER
 - 4.4.3. NETTER/LINER/JIGGER
 - 4.4.4. DREDGER OR BEAM TRAWLING
 - 4.4.5. PURSE SEINE

**INSPECT
REGULARLY**

4.1. INTRODUCTION

WORK EQUIPMENT

Refers to any equipment used in the course of work on board the vessel, such as:

- hand tools, both manual and power operated;
- ladders, both fixed and portable;
- conveyors;
- elevators;
- ice plants;
- galley and wheelhouse equipment;
- winches;
- haulers;
- net drums;
- powerblocks, cranes and associated sheaves, hanging blocks, and gantries;
- shore based equipment used in landing operations such as forklifts and self-propelled work equipment.

Any person responsible for the operation of the vessel must ensure that work equipment is:

- Suitable for use and fit for purpose and the conditions in which it is being used;
- Maintained in a safe condition for use so that people's health and safety is not placed at risk;
- Inspected to ensure that it continues to be safe for use.

All inspections should be carried out by a competent person and records kept.

Concerning **Lifting Equipment** such as winches and haulers, they must be subject to particular safeguards and checks. Lifting equipment must be:

- Suitable, sufficiently strong and stable for the proposed use. Similarly the load and anything attached to it (e.g. fish boxes, lifting hooks etc.) should be suitable;
- Positioned or installed to prevent the risk of injury, e.g. from the equipment or the load falling or striking people;
- Visibly marked with appropriate information to be taken into account for its safe use, e.g. safe working loads. Accessories such as stops, slings clamps etc. should be similarly marked.

Operators must observe that:

- Lifting operations are planned and supervised and carried out in a safe manner by people who are competent;
- A suitable risk assessment has been carried out before the operation begins;
- Equipment used for lifting people is marked accordingly and is safe for such a purpose, e.g. all necessary precautions have been taken to remove or reduce the risk;
- Any defective equipment is taken out of service immediately.

For the purposes above, the competent person must be able to demonstrate a thorough knowledge of lifting equipment and lifting operations. This could be the skipper or a crew member but it is recommended that a qualified person should be used.

4.2. HAND SIGNALS FOR LIFTING OPERATIONS

Diagrams reproduced courtesy of the UK Maritime and Coastguard Agency.

OPERATIONS START Follow my instructions OPERATIONS CEASE Cease to follow my instructions	Clench and unclench fingers to signal "take the strain" or "inch the load"
HOIST	STOP EMERGENCY STOP
LOWER	SLEW LEFT SLEW RIGHT
TRAVEL TO ME TRAVEL FROM ME Signal with both hands	TRAVEL LEFT TRAVEL RIGHT

VI-14. Standard hand signals for lifting operations.

4.3. EXAMINATION, INSPECTION AND RECORD KEEPING

Before lifting equipment, including accessories, is used for the first time it must be inspected by a competent person. Lifting equipment should also be thoroughly examined, whilst in regular use, for any defects at least annually.

An examination scheme is to be drawn up by the competent person and examinations are to be carried out by a competent person, and the details entered into a maintenance record book which should be available for inspection. After every examination or, inspection of lifting equipment, a report is to be submitted to the fishing vessel owner and the skipper so that they can take appropriate action.

All equipment used for lifting operations is to be considered including attachments used for anchoring, fixing or supporting it. Accessories such as chains, strops, slings, eyebolts etc. are also included. Hauling equipment (warps, ropes, chains, links, shackles etc.) that normally enters the water or, is submerged in the general course of fishing, can be disregarded. However, where the trawl winch or hauler is used for any lifting operation; that use must be considered.

Thus, although a winch may have a pull of 5 tonnes, when it is being used to land the catch lifting only 0.5 tonne per lift, it should be inspected and examined on the basis of the 0.5 tonne load.

The frequency of inspection will depend on the conditions and use of the item; for something under heavy use in conditions that may cause rapid corrosion or wear, three months is a reasonable period. For other items perhaps six months, but certainly, at least annually for all items.

The following section suggests an inspection form for trawlers, potters, netter/liner/jigger and dredger/beam trawler and purse seiner. It should be noted that the list of items is not exhaustive.

4.4. INSPECTION FORMS

4.4.1. TRAWLER

ITEM	CONDITION/RESULT A: acceptable R: need repair/replacement/adjustment C: corrected NA: not applicable			
	3 months	6 months	9 months	12 months
Winch including: seatings, brakes, clutches, guiding on-gear, rollers, control valve and hydraulics				
Deck sheaves and Hanging blocks including shackles				
Towing point, towing chains or wires, 'Stopper' chains				
Bag lifting derrick or gantry including: winch, wire, block, shackles hook, control valve and hydraulics				
Landing rig including: derrick, blocks, wire, hook, shackles, box hooks, winch, control valve and hydraulics				
Powerblock and crane				
	6 months		12 months	
Net drum including: control and hydraulics				
Fish handling system, conveyor, elevator, etc.				
Fishroom ladder				
Power hand grinder				
Power drill				
Welding plant				
Portable generator				
Burning & cutting gear				
	12 months			
Hand tools and miscellaneous				
'Hammerlock' shackle punches				
Loose lifting equipment				

Loose lifting equipment such as chain blocks must be inspected before use and after 12 months.

4.4.2. POTTER

ITEM	CONDITION/RESULT A: acceptable R: need repair/replacement/adjustment C: corrected NA: not applicable			
	3 months	6 months	9 months	12 months
Hauler including: mounting, sheaves, ejector knife, control and hydraulics				
Davit block including: davit mounting, block and shackle				
Gunwhale roller if used instead of a davit block				
Bag lifting derrick or gantry including: winch, wire, block, shackles hook, control valve and hydraulics				
Landing rig including: derrick, blocks, wire, hook, shackles, box hooks, winch, control valve and hydraulics				
	6 months		12 months	
Fishroom ladder				
Power hand grinder				
Power drill				
Welding plant				
Portable generator				
Burning & cutting gear				
	12 months			
Hand tools and miscellaneous				
Loose lifting equipment				

Loose lifting equipment such as chain blocks must be inspected before use and after 12 months.

4.4.3. NETTER/LINER/JIGGER

ITEM	CONDITION/RESULT A: acceptable R: need repair/replacement/adjustment C: corrected NA: not applicable			
	3 months	6 months	9 months	12 months
Net Hauler including: mounting, gripper roller/ conveyor, control and hydraulics				
Net shaker/stacker				
Line Hauler including: mounting, sheaves, ejector knife, control and hydraulics				
Fairlead or davit block if used				
Landing rig including: derrick, blocks, wire, hook, shackles, box hooks, winch, control valve and hydraulics				
	6 months		12 months	
Hand gurdies				
Fish strippers				
Fishroom ladder				
Power hand grinder				
Power drill				
Welding plant				
Portable generator				
Burning & cutting gear				
	12 months			
Hand tools and miscellaneous				
Loose lifting equipment				

Loose lifting equipment such as chain blocks must be inspected before use and after 12 months.

4.4.4. DREDGER OR BEAM TRAWLING

ITEM	CONDITION/RESULT A: acceptable R: need repair/replacement/adjustment C: corrected NA: not applicable			
	3 months	6 months	9 months	12 months
Winch including: seatings, brakers, clutches, guiding-on-gear, rollers, control valve & hydraulics				
Derricks including: swivels, blocks and wires, derrick end blocks and safety releases				
Deck sheaves and Hanging blocks including: shackles				
Bag lifting derrick or gantry including: winch, wire, block, shackles hook, control valve and hydraulics				
Landing rig including: derrick, blocks, wire, hook, shackles, box hooks, winch, control valve and hydraulics				
Beam trawl/dredge rigging				
Beam restraining chains (for stowage and repair)				
	6 months		12 months	
Fish handling system, conveyor, elevator, etc.				
Fishroom ladder				
Power hand grinder				
Power drill				
Welding plant				
Portable generator				
Burning & cutting gear				
	12 months			
Hand tools and miscellaneous				
Loose lifting equipment				

Loose lifting equipment such as chain blocks must be inspected before use and after 12 months.

4.4.5. PURSE SEINE

ITEM	CONDITION/RESULT A: acceptable R: need repair/replacement/adjustment C: corrected NA: not applicable			
	3 months	6 months	9 months	12 months
Auxiliary Boat: condition, engine, emergency equipment, radio				
Launching/recovery rig: lifting wires, blocks and shackles, winch and structure				
Line Hauler including: mounting, sheaves, ejector knife, control and hydraulics				
Aft Net Hauler: including hydraulic mounting and controls				
Fwd. Net Hauler: including hydraulic mounting and controls				
Purse Line Winch: associated blocks and rigging				
Brailing Rig and Winch: including derrick and all rigging				
Fish Pump: including derrick and all rigging				
Net Transporting Rollers: including mounting crane and controls				
Landing Derrick/Crane: including all associated blocks, chains, shackles etc.				
	6 months		12 months	
Fishroom ladder				
Power hand grinder				
Power drill				
Welding plant				
Portable generator				
Burning & cutting gear				
	12 months			
Hand tools and miscellaneous				
'Hammerlock' shackle punches				

Loose lifting equipment such as chain blocks must be inspected before use and after 12 months.

Module VI • **Additional information**

5 • Emergency Drills

- 5.1. INTRODUCTION
- 5.2. HOW TO CONDUCT AN EFFECTIVE DRILL
- 5.3. THE EMERGENCY PLAN
- 5.4. ACTION CHECKLIST FOR EMERGENCY SITUATIONS
 - 5.4.1. MAN OVERBOARD
 - 5.4.2. FLOODING
 - 5.4.3. PERSONAL INJURY/MEDICAL EMERGENCY
 - 5.4.4. SEVERE WEATHER
 - 5.4.5. FIRE
 - 5.4.6. ABANDON THE VESSEL
- 5.5. RECORD OF EMERGENCY DRILLS CONDUCTED

**DISCUSS
POSSIBLE
SCENARIOS**

5.1. INTRODUCTION

An emergency drill is an exercise in which the skipper and crew can simulate the circumstances of a disaster or dangerous situation onboard, so that they have an opportunity to practice their responses. While a drill may not anticipate every potential scenario, it gives crew members an idea on how to respond during an emergency. The aims of a good emergency response are:

- To initiate a rapid response;
- To control the incident or reduce its escalation;
- To facilitate the evacuation, escape and rescue from danger;
- To protect life (by timely medical help); and
- To protect the vessel and its equipment.

5.2. HOW TO CONDUCT AN EFFECTIVE DRILL

A drill should be designed to give each crew member the opportunity to practice their assigned roles during a real the emergency, become familiar with the location and type of equipment available onboard, and increase the confidence of the crew as a team. It will also identify any weaknesses in a plan, which can then be corrected.

1. Vary the drills by choosing different situations onboard such as a fire in the accommodation or the engine room, a fall overboard or the evacuation of an injured person.
2. Do not put anyone at risk of injury during the drill.
3. Crewmembers should check and know how to operate the equipment confidently.
4. Encourage the crew to work as a team to deal with the situation in a safe and efficient manner.
5. Crewmembers may feel some pressure. However, it is important they understand they count on each other to be safe during a real emergency.
6. Debrief all drills. Urge the crew to talk about what they have learned and what improvements, if any, could be made afterwards. For example:
 - Is additional equipment needed?
 - Is there an alternative location for the storage of equipment?
 - Does any crew member require additional (or refresher) training?

5.3. THE EMERGENCY PLAN

As part of your plan, the following information should be considered and recorded in the log.

- a. A short description of each potential emergency situation (e.g. man overboard, fire, foul-gear).
- b. A checklist of immediate actions to be followed in response to each emergency situation.
- c. Allocate the names of persons responsible for actions or procedures to be followed in the plan.

5.4. ACTION CHECKLIST FOR EMERGENCY SITUATIONS

This section provides a checklist of basic actions for the most likely emergency situations on small vessels. The checklists may well assist in the preparation of the drill and debrief.

5.4.1. MAN OVERBOARD

Take precautions to reduce the risk of falls overboard but be prepared for a successful recovery operation. Know what to do and develop a suitable plan for your particular boat.

Procedures for the recovery of a man overboard shall consider the following actions and provisions:

- Raise the alarm: shout 'man overboard'.
- Appoint a look-out: keep sight of the man in the water.
- Throw a lifebuoy: to mark the position.
- Turn the boat: return to reciprocal course.
- Distress signal: call on the radio for assistance.
- Retrieval: rig a means of getting the man back onboard.
- Organise: have suitable means of retrieval, such as a basket, ladder, lifting strop or other.
- First aid/medical attention: have a suitable first aid kit and training to counter hypothermia.

5.4.2. FLOODING

On decked boats, flooding can occur at any time while at sea or in the harbour. Flooding is preventable but if not prevented, in most cases it can be controlled. If discovered early, leaking pipes can be isolated and the flooding controlled by pumping out the affected space.

Flooding can also be rapid and late discovery leaves no time to treat the cause. An efficient bilge alarm can be critical in providing early warning of flooding.

To reduce the risk of flooding or the damage from flooding, always maintain watertight compartments and check that all spaces below deck are serviced and maintained in good working order. Should flooding occur on your vessel:

- Raise the alarm.
- Start pumps, check suction is working effectively.
- Wheelhouse watch keeper to send a radio message to nearby vessels and coast guard.
- Turn vessel towards shallower water or port. Consider beaching the vessel.
- Attempt to stem the flow of water by shutting valves, or blocking the hole.
- If pumps are out of action get out and seal the compartment.
- Close doors, hatches and ports to prevent down flooding.
- Leave scuppers or freeing ports open to drain excess water.
- Erect dummy bulkheads using pound boards or fish bins tied across the compartment.
- Look for holes leaking into adjoining compartments.
- Consider stability effects of flooded compartment.
- Use a fothering sheet to block the ingress.
- Prepare to abandon the vessel. Remain on the vessel for as long as it is safe to do so.
- Only abandon the vessel on the command of the skipper.
- Do not wear PFDs or immersion suits while inside the vessel (enclosed spaces) because their buoyancy may hamper escape during a sudden capsizing. However, have them broken out as to be readily available.

5.4.3. PERSONAL INJURY/MEDICAL EMERGENCY

Crew should be trained in First Aid and know how to deal with medical emergencies such as unconsciousness, cuts, burn, hypothermia, and cold shock. If a casualty occur act as follows:

- Monitor the health of the injured person on board.
- Raise an alert by sending a Mayday radio call if life-threatening.
- Request medical advice by radio, if required.
- Prepare for evacuation by helicopter or other vessel.
- Or evacuate by returning to port.

5.4.4. SEVERE WEATHER

Before you go to sea, make certain you know the predicted weather and sea conditions for your local area.

- Continually monitor weather in your area while at sea.
- Notify the crew if rough weather is imminent and/or before you intend to cross any hazardous location.
- Close doors, hatches and ports to prevent water from entering the vessel.
- Pump bilges dry to prevent loss of stability.
- Crew should secure loose deck equipment and cargo.
- Inspect all intakes and discharge lines that penetrate the hull for leakage.
- Be prepared to carry out temporary repairs.
- Do not wear PFDs or immersion suits while inside the vessel (or enclosed spaces) because their buoyancy may hamper escape during a sudden capsizing. However, have them broken out as to be readily available.
- Plan to secure the vessel in sheltered waters (safe haven) should it be necessary.

5.4.5. FIRE

Fires may start in the galley or the engine room. Equip your vessel with suitable means to fight the fire in those areas. Ensure that the area around the cooker is clean and have a fire blanket readily available to smother any fire. On the other hand, the engine room may be fitted with an inert gas system. Regularly check the valves of the water spray systems. In case of fire be prepared to implement the following actions:

- Whoever discovers the fire must raise the alarm.
- Notify the Coastguard.
- If possible, locate the source of the fire.
- Shut down all ventilation. Close hatches, doors, ports, windows and blowers.
- Cut off the electrical system supply of the affected space.
- Ensure the safe escape of persons from the fire zone.
- Contain and extinguish the fire.
- Manoeuvre the vessel to minimise the effect of wind on the fire.
- Set up the boat so smoke is blowing away from the boat.
- Inspect adjacent spaces to prevent the spread of the fire.
- Once the fire is extinguished, check the stability of the vessel.
- If water was used to fight the fire, begin the operations to remove the water.
- Assess further action.
- Recover equipment.

5.4.6. ABANDON THE VESSEL

Preparations to abandon the vessel include the following actions, as time and conditions allow:

- Sound the alarm.
- Send a MAYDAY and report the reason for the distress.
- Have an approved liferaft and prepare to launch it.
- Have a 'grab bag' and take it with you. The kit may contain the items below:
 - Flares or visual distress signals
 - EPIRB (Emergency Position Indicating Radio Beacon)
 - SART (Search and rescue transponder)
 - Flashlights
 - Handheld or VHF radio
 - Water and non-perishable food
 - First aid kit
 - Warm clothing.
- Muster the crew and assign each a task or duty.
- Abandon the vessel when lives are at risk (sinking is about to occur).
- Close watertight openings.
- Launch liferaft. Board the liferaft dry, if possible.
- Keep the painter securely attached to the vessel but be prepared to cut it once everyone is in the raft.
- Launch the sea anchor and inflate the floor of the raft.
- Post lookouts.
- Activate the EPIRB.
- Manage and continually assess the situation until rescued.

5.5. RECORD OF EMERGENCY DRILLS CONDUCTED

Man Overboard	Date
Flooding	Date
First Aid	Date
Severe Weather	Date
Fire	Date
Abandon The Vessel	Date

ANNEXES

ANNEX 1: EU OSH DIRECTIVES

ANNEX 2: FAO / ILO / IMO LEGISLATION

- Council Directive 89/391/EEC of 12 June 1989 on the introduction of measures to encourage improvements in the safety and health of workers at work (Framework Directive)
Official Journal L 183, 29.6.1989, p. 1
- Directive 2009/104/EC of the European Parliament and of the Council of 16 September 2009 concerning the minimum safety and health requirements for the use of work equipment by workers at work (second individual Directive within the meaning of Article 16(1) of Directive 89/391/EEC Codification of Directive 89/655/EEC, as amended by Directives 95/63/EC, 2001/45/EC and 2007/30/EC)
Official Journal L 260, 3.10.2009, p. 5 Use of work equipment, 1989
- Council Directive 89/656/EEC of 30 November 1989 on the minimum health and safety requirements for the use by workers of personal protective equipment at the workplace (third individual directive within the meaning of Article 16 (1) of Directive 89/391/EEC)
Official Journal L 393, 30.12.1989, p. 18
- Council Directive 90/269/EEC of 29 May 1990 on the minimum health and safety requirements for the manual handling of loads where there is a risk particularly of back injury to workers (fourth individual Directive within the meaning of Article 16 (1) of Directive 89/391/EEC)
Official Journal L 156, 21.6.1990, p. 9
- Council Directive 91/383/EEC of 25 June 1991 supplementing the measures to encourage improvements in the safety and health at work of workers with a fixed-duration employment relationship or a temporary employment relationship
Official Journal L 206, 29.7.1991 p. 19
- Council Directive 92/29/EEC of 31 March 1992 on the minimum safety and health requirements for improved medical treatment on board vessels
Official Journal L 113, 30.4.1992, p. 19
- Council Directive 92/58/EEC of 24 June 1992 on the minimum requirements for the provision of safety and/or health signs at work (ninth individual Directive within the meaning of Article 16 (1) of Directive 89/391/EEC)
Official Journal L 245, 26.8.1992, p. 23
- Council Directive 94/33/EC of 22 June 1994 on the protection of young people at work
Official Journal L 216, 20.8.1994 p. 12
- Council Directive 98/24/EC of 7 April 1998 on the protection of the health and safety of workers from the risks related to chemical agents at work (fourteenth individual Directive within the meaning of Article 16 (1) of Directive 89/391/EEC)
Official Journal L 131, 5.5.1998, p. 11
- Directive 2000/54/EC of the European Parliament and of the Council of 18 September 2000 on the protection of workers from risks related to exposure to biological agents at work (seventh individual directive within the meaning of Article 16(1) of Directive 89/391/EEC) Codification of directive 90/679/EEC
Official Journal L 262, 17.10.2000, p. 21
- Directive 2002/44/EC of the European Parliament and of the Council of 25 June 2002 on the minimum health and safety requirements regarding the exposure of workers to the risks arising from physical agents (vibration) (sixteenth individual Directive within the meaning of Article 16(1) of Directive 89/391/EEC)
Official Journal L 177, 6.7.2002, p. 13
- Directive 2003/10/EC of the European Parliament and of the Council of 6 February 2003 on the minimum health and safety requirements regarding the exposure of workers to the risks arising from physical agents (noise) (Seventeenth individual Directive within the meaning of Article 16(1) of Directive 89/391/EEC)
Official Journal L 42, 15.2.2003, p. 38
- Directive 2004/37/EC of the European Parliament and of the Council of 29 April 2004 on the protection of workers from the risks related to exposure to carcinogens or mutagens at work (Sixth individual Directive within the meaning of Article 16(1) of Council Directive 89/391/EEC) (codified version)
Official Journal L 158, 30.4.2004 p. 50
- Directive 2006/25/EC of the European Parliament and of the Council of 5 April 2006 on the minimum health and safety requirements regarding the exposure of workers to risks arising from physical agents (artificial optical radiation) (19th individual Directive within the meaning of Article 16(1) of Directive 89/391/EEC)
Official Journal L 114, 27.4.2006, p. 38

- IMO, Convention on the International Regulations for Preventing Collisions at Sea (COLREGs), adopted on 20 October 1972
<http://www.imo.org/en/About/Conventions/ListOfConventions/Pages/COLREG.aspx>
- IMO, International Convention on Maritime search and rescue – SAR, adopted on 27 April 1979
<https://treaties.un.org/doc/Publication/UNTS/Volume%201405/volume-1405-I-23489-English.pdf>
- FAO, Code of conduct for responsible fisheries, 1995
<http://www.fao.org/docrep/005/v9878e/v9878e00.htm>
- FAO/ILO/IMO, Document for guidance on the training and certification of fishing vessel personnel, 2000
<http://www.fao.org/fishery/safety-for-fishermen/51553/en/>
- FAO/ILO/IMO, The Voluntary guidelines for the design, construction and equipment of small fishing vessels, 2005
<http://www.fao.org/fishery/safety-for-fishermen/50769/en/>
- ILO, Work in Fishing Convention, 2007 (Convention No 188)
http://www.ilo.org/dyn/normlex/en/f?p=NORMLEXPUB:12100:0::NO::P12100_ILO_CODE:C188
- ILO, Work in Fishing Recommendation, 2007 (Recommendation No 199)
http://www.ilo.org/dyn/normlex/en/f?p=1000:12100:0::NO::P12100_ILO_CODE:R199
- IMO, Code of the International Standards and Recommended Practices for a Safety Investigation into a Marine Casualty or Marine Incident, 13 June 2008
http://emsa.europa.eu/retro/Docs/marine_casualties/msc-mepc_3-circ_2.pdf
- FAO/ILO/IMO, Safety recommendations for decked fishing vessels of less than 12 metres in length and undecked fishing vessels, 2012
<http://www.fao.org/docrep/017/i3108e/i3108e.pdf>

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This guide is designed to prevent risk for small fishing vessels and those working on them, so that both the vessels and their crews return safe and sound after a trip. Given that these vessels account for about 80 % of the EU's entire fishing fleet and that fatalities, injuries and lost vessels are at unacceptable levels, this guide is critical in preventing risks and protecting the wider fishing communities. The different modules in the guide focus on key areas, notably the vessel, the crew, fishing operations, real case events, risk assessment and additional information such as flotation devices, stability, first aid, work equipment and emergency drills. A glossary along with illustrations, photos and charts serve to highlight the important points in the guide, making it an extremely user-friendly reference.

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