

COMPLIANCE SUPPORT GUIDE



CROSS SECTOR COMPLIANCE SUPPORT GUIDE

SEAFISH



CONTENTS

1 / INTRODUCTION

- 1.1 The Responsible Fishing Scheme 04
- 1.2 RFS Compliance Support Guides 05

2 / HEALTH AND SAFETY

- 2.1 Risk assessment 06
- 2.2 Crew induction 07
- 2.3 Muster plan 08
- 2.4 Emergency drills 08
- 2.5 Stability 10

3 / WELFARE

- 3.1 Work agreements 12
- 3.2 Fitness to work 13
- 3.3 Drugs and alcohol 14
- 3.4 Safe manning 15
- 3.5 Living arrangements 16

4 / CATCH SAFETY AND TRACEABILITY

- 4.1 Food (catch) safety control systems 20
- 4.2 Pest control 24
- 4.3 Personal hygiene requirements for crew 25
- 4.4 Traceability 26

5 / ONBOARD FOOD PREPARATION

- 5.1 Personal responsibility 27
- 5.2 Principles of food hygiene for food handlers 27
 - 5.2.1 Food hazards 27
 - 5.2.2 Contamination and cross contamination 28
 - 5.2.3 Food poisoning and food borne disease 28
- 5.3 Working environment 29
- 5.4 Personal hygiene 30
- 5.5 Purchase and receipt of food and supplies 30

CONTENTS (continued)

5 / ONBOARD FOOD PREPARATION (continued)



5.6	Storage	31
5.7	Temperature control	31
5.8	Safe water supplies	32
5.9	Cleaning	33
5.10	Waste disposal and pests	34

6 / THE ENVIRONMENT



6.1	Introduction	35
6.2	Environmental commitment	35
6.3	Waste management	36
6.4	Vessel maintenance	36
6.5	Recovery of lost fishing gear	39
6.6	Scientific engagement	40
6.7	Supporting information	41
	6.7.1 Fisheries gear type by catch mitigation measures implemented in fisheries.	41
	6.7.2 FAO Factsheet: retrieval of lost gear.	42

3/ GLOSSARY



3.1	Glossary	43
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1 / INTRODUCTION

1.1 The Responsible Fishing Scheme

The Seafish Responsible Fishing Scheme (RFS) is a voluntary vessel-based programme certifying high standards of crew welfare and responsible catching practices on board fishing vessels.

The RFS is open to all types of fishing vessels and fisheries, and is a 'business-to-business' tool that helps fishermen showcase best practice through independent, third-party auditing. To become certified, applicants must meet the requirements of the RFS Standard. A vessel and its skipper is the 'unit' audited against the Standard.

Certification to the scheme demonstrates that the skipper and vessel operate to best practice in five core areas:

Core Principle 1: Safety, health and welfare

- A commitment to generating a culture of integrity and respect (e.g. no forced labour) will be demonstrated.
- Best practice drawn from other relevant safety management and ethical and welfare initiatives to improve safety of the crew and promote decent working conditions.

Core Principle 2: Training and professional development

- Access to training for the key priority areas, especially safety.
- Focus on improving skills, knowledge and understanding.
- Commitment to raise standards, open up new opportunities and cooperate with management authorities.

Core Principle 3: The vessel and its mission

- The vessel and its gear are in compliance with all current legislation.
- The vessel operates within the legal framework with the right documentation in place.
- Full cooperation with Voluntary Agreements in existence in the fisheries within which they operate.

Core Principle 4: Care of the catch

- Focus on supplying safe, high quality, wholesome product with known provenance.
- Hygienic handling and storage at appropriate temperatures.
- Full traceability from catch to quayside.
- Responsible capture and landing of live products.
- Commitment to maintaining the value of the catch.

Core Principle 5: Care for the environment

- Responsible practice with respect for the environment (management of litter, lost fishing gear recovery, wildlife interaction records).
- Supporting fishery science (e.g. observers, science partnerships etc).
- Tie-in with other voluntary schemes.

1 / INTRODUCTION



1.2 RFS Compliance Support Guides

The RFS Compliance Support Guides (CSGs) underpin the RFS Standard and assist the skipper in understanding all areas that need to be complied with to successfully achieve RFS certification.

There are six CSGs in total - five sector-specific guides that the applicant will work through as appropriate to their own operations, and one cross sector guide that applies to all sectors. **Applicants should read all the applicable CSGs before submitting their RFS application forms.**

Sector specific CSGs (applicants must read any which cover their type of fishing operations)

- Demersal
- Shellfish
- Nephrops
- Pelagic
- Scallops

General Cross Sector CSG (all applicants must read this guide)

- Health and Safety
- Welfare
- Catch safety and traceability
- Onboard food preparation
- The environment

The legal requirements that apply to the operation of a fishing vessel cover basic issues of food safety, fish marketing, fishery controls and health and safety, most of which meet requirements set by the EU. **It is the responsibility of the skipper to ensure that the vessel is operating and catching within the appropriate legal framework.**

The CSGs provide information and support to assist applicants in meeting the conditions of the RFS Standard, and help them prepare for the RFS certification audit. These guides include support on general fishing operations as well as sector specific practices. The Guides direct RFS applicants to relevant documents and explain the conditions which underpin the Scheme, and help in the application and preparation process before a vessel undertakes its certification audit.

2 / HEALTH AND SAFETY



2.1 Risk assessment

A risk assessment is the process of evaluating risks to workers' safety and health from workplace hazards. To do this you need to think about what might cause harm to people and decide whether you are taking reasonable steps to prevent that harm.

This guide will help you to create a sensible and efficient risk assessment for your vessel which will also meet the requirements of the Responsible Fishing Scheme.

Policy statement

This is a simple statement which outlines the rules which govern the vessel, for example a rule that all crew must wear Personal Flotation Devices (PFDs) whilst on deck. An example/template Safety Policy is included in the Seafish Safety Folder or online at www.safetyfolder.co.uk. **Alternatively FORM OB 1 available from the [RFS website](#) can be used for this purpose.**

Hazards

Starting a risk assessment may seem daunting but the first step is to list all potential causes of risk, commonly known as hazards. A hazard does not need to be moving or even be in use to be a hazard. Examples of hazards include the winch, the deck and work areas, getting on and off the boat - even the catch itself can be a hazard. The generic templates in the Seafish Safety Folder or online at www.safetyfolder.co.uk will be enough to get you started but you will need to add your own risks as every vessel is unique.

Alternatively FORMS OB6a to 6g available from the [RFS website](#) can be used.

Risk identification

Risks are the way in which someone is affected by a hazard. Always be aware that there may be more than one risk which occurs. For example, when using a winch risks can include getting caught in the machinery or a wire snapping.

When identifying risk there are two key points:

- 1 Who the risk affects.
- 2 How the risk occurs.

Control measures

Once risks are identified you can start to describe how you control these risks. Think about the control measures which are vital for the safe operation of a fishing vessel. These include:

- 1 Guards.
- 2 Training.
- 3 Personal Protective Equipment.
- 4 Signs.

2 / HEALTH AND SAFETY



Mitigation measures

If a hazard can't be controlled completely then it may be necessary to add extra measures to protect the crew from harm should the risk occur. This is known as Mitigation. An example would be for crew to wear head protection to reduce the risk of head injuries.

2.2 Crew induction

Crew induction is the formal term given to initial training and collection of relevant information for the crew. It is essential that new crew are suitable for the work that is intended for them.

Crew checks

When recruiting crew, for any length of time, important checks must be made including that they are legally allowed to work in the UK. The most basic of these checks is to ask for a national insurance number and associated paperwork. Equally important, you must also check whether they are qualified to work as crew on a fishing vessel. For more information on crew qualifications please see Section 3.4 of this guide.

Basic personal details

You are required to have basic details of all crew on board the vessel for safety and legal purposes. As a minimum you should have the following details and they should be accessible to you on board:

- Full name
- Address
- Date of birth
- Contact number

Next of kin

In case of emergency, it is vital to have next of kin details for all crew accessible to you on board the vessel, information should include:

- Full name
- Address
- Relationship to crew
- Contact number

Joining the vessel

When joining the vessel for the first time it is essential that the crew are shown the safety equipment and associated procedures related to their work.

Each vessel will have its own method of carrying out induction training so it is important that you take the time to develop your own process. An Induction Checklist is a good way of ensuring crews have complied with everything. Provide them with a list of items on

2 / HEALTH AND SAFETY



the vessel and give the crew time to identify the location and return the completed checklist so you know they have checked all areas. **FORMS OB 22, OB 23, and OB 24 available from the [RFS website](#) can be used for this purpose.**

Recording induction

The process of induction is much more important than the paperwork, but the paperwork helps to keep an ordered approach to the induction and provide structure. This paperwork will be required as part of a vessel audit. **FORM OB 22 available from the [RFS website](#) can be used for this purpose.**

2.3 Muster plan

A muster plan is necessary to make sure that if an emergency does occur on board then the crew will be able to take quick and efficient action to save or abandon the vessel. Regular training ensures crew will have the confidence and discipline to act, which is often lost during emergencies. The muster plan gives structure to emergency actions and assigns responsibilities to each crew member.

General alarms

The vessel must have an agreed muster alarm. This can be as simple as the skipper shouting on a small vessel, a fog horn or an electrical system which involves flashing lights and sirens. The merchant navy standard General Alarm is seven short and one long blast on the vessel's whistle (fog horn).

Upon hearing the alarm the crew should muster. This involves going to the muster point and donning extra clothing, waterproofs, immersion suits and lifejackets.

2.4 Emergency drills

Drills are the term given to whole crew training in preparation for an emergency. Accident reports often highlight that there was panic on board the vessel, and that drills would help to reduce panic and improve the chances of saving the vessel, or at least allowing the crew to abandon the vessel safely.

When to drill

Drills should be completed monthly and immediately after a change of crew or a new crew member joining the vessel.

How to drill

A good skipper will know how to get the best from their crew, and with a drill the same rules will apply. Try to make drills interesting and competitive by timing the drills and comparing them to previous attempts. You might also want to offer simple incentives to improve the quality of the drill. Some examples of drills include:

Helicopter operations checklist

- Secure or remove all loose items from deck areas.
- Remove or secure aerials and put radar to standby.

2 / HEALTH AND SAFETY



- Prepare to receive instructions from the helicopter on VHF Ch16.
- Make sure all lifesaving equipment is ready for use.
- Make sure your lights are not going to cause glare.
- Allow the winch wire/winchman to earth before touching them.
- If there is a medical evacuation, write down details of casualties including, name, next of kin and any treatment received on board.

Person overboard checklist

- Throw a life ring in to the sea as close as possible to person overboard.
- Raise the alarm by shouting.
- Commence recovery procedure.
- Inform the coastguard via DSC and/or Ch 16 Mayday.

Fire onboard checklist

- Raise the alarm on discovery of smoke or fire.
- Restrict the fire if possible by closing hatches.
- Muster crew and call the Coastguard.
- Prepare lifesaving equipment and firefighting equipment.
- If safe, extinguish the fire with due caution.
- Or escape via liferaft or abandon to water (inform Coastguard)

Grounding checklist

- Check for damage.
- If assistance is required call the Coastguard for assistance.
- Determine where the safest route to deep water lies.
- Consider the use of anchors to stop the vessel going further aground.
- If possible reduce the weight of the vessel to decrease its draught.
- If it is impossible to refloat or damage is too great remain grounded until assistance arrives.

Hull damage checklist

- Check for damage.
- Identify the location of water ingress.
- Cut off electrical power in the immediate area.
- Shore up area, turn off seacocks or use a fothering sheet to reduce ingress.
- Use auxiliary pumps and bucket to remove water.
- If necessary prepare to abandon the vessel in enough time.

2 / HEALTH AND SAFETY



Abandoning ship checklist

- Abandon the vessel as a last resort only.
- Muster crew (if possible take sea sickness tablets).
- Transmit a distress call and message.
- Put on lots of warm clothing and PFDs.
- If available, prepare life rafts remembering to secure the painter.
- Abandon the vessel.
- Cut painter at the last safest moment possible.

Medical emergencies checklist

- Deliver first aid, and make initial assessment.
- Contact Coastguard for advice/medical evacuation.
- Prepare casualty for evacuation, include medical details (see helicopter operations checklist).
- Attach any records/relevant information to casualty (passport if abroad).
- Record incident in vessel log and report to MAIB.

An example of a drills record can be found on the [RFS website](#) listed as FORM OB 21.

2.5 Stability

Knowing about the stability of vessels is important as without it skippers and crews cannot know the safe limits within which their vessel can operate. Knowing what causes reduced stability is equally important as this will enable skippers and crews to avoid situations and activities where stability could be compromised.

All applicants to the RFS must make an assessment of their vessel's stability. Potential causes of instability must be understood and managed everyone on board.

There are various stability tests that can be undertaken and applicants should seek expert advice as to which test is most appropriate for their vessel. Advice can be sought from a variety of sources including Seafish Marine Services and the Maritime and Coastguard Agency.

Understanding causes of instability

Vessel operators must have a working knowledge of the causes of reduced stability and take these into consideration when undertaking risk assessments associated with their activities. Potential causes should be listed and conveyed to all crew members and should form part of any induction training. Such records will also enable applicants to the RFS to demonstrate an understanding of the importance of stability to visiting assessors.

In addition, it is important to consider the effects of changes to vessel design and layout and also the potential stability implications caused by changes in fishing method.

2 / HEALTH AND SAFETY



For further information please visit any of the following:

- www.f-a.dk/ (click on publications to view Stability Guide for Smaller Vessels)
- <http://rnli.org/safety/respect-the-water>
- www.rina.org.uk/

For more information on stability awareness training, further information can be found either on the main Seafish website www.seafish.org/training or via Seafish's online training platform <http://seafishonlinetraining.co.uk/>

3 / WELFARE



3.1 Work agreements

A work agreement is necessary to make it clear what is expected of both parties to the agreement. If the crew is employed by the owner the agreement is an employment contract and should be in a language the respective crew can fully understand. If a crew member is self-employed the agreement should in no way change the rights afforded to a share fisherman or in any way change their self-employed status to that of an employee.

Rates of pay for employed fisherman cannot be lower than those applicable to crews from their respective country of residence. However the crew have the right to negotiate their rate of pay with the employer to a higher level than those described above.

Self-employed crews (share fishermen)

Crew members who are paid a share of the catch or are remunerated per trip are generally classed as self employed share fishermen. This status allows these crew members to move freely between vessels for work, and to manage their own tax and social security affairs. A requirement of the RFS is that there must be a work agreement between the vessel owner and each share fisherman, which states the terms of the service the crew member provides, and the terms of what they receive in return. This agreement must be in a language the respective crew member can fully understand and a copy of the agreement must be given to them to keep.

FORM OB 16 available from the [RFS website](#) can be used for this purpose.

This agreement is not an employment contract and does not change the employment status of the owner or the crew with respect to health and safety legislation or tax and social security obligations.

Employed crews

Employed crew members are paid a regular wage on a fixed period basis. This period shall not be more than one calendar month. Employed crew have the right to paid holiday leave as well as other benefits. Each employed crew member must have a contract of employment. **FORM OB 16 available from the [RFS website](#) can be used for this purpose.**

EEA crews

Crews from the European Economic Area (EEA) are able to freely move between EU countries and engage in work. These crews are typically self-employed and therefore require a work service agreement to be in compliance with the RFS. **FORM OB 16 available from the [RFS website](#) can be used for this purpose.**

Non EEA crew working inside 12nm

If the non EEA crew are to work inside the 12nm sea area **they will require a work visa for the UK.**

Non EEA crew working outside 12nm

If non EEA crew are to work outside the 12nm sea area they will require a transit agreement from the border agency. They will not be permitted to leave the vessel during their contract other than to transit to and from their vessel back to home, unless on authorised ship's business. The employer is liable for travel expenses of the crew in all circumstances.

3 / WELFARE



What constitutes authorised ship's business is documented in the MGN 413 Code of Practice for Employment of non EEA Fishing Crew, available at: www.gov.uk/government/publications

Pay statement

Whichever way a crew member is paid, a record of funds received should be made, signed by a crew member and a copy made available to that crew member.

Using private recruitment agencies

In cases where crew are not paid by the vessel owner but directly by the recruitment agency, the vessel owner must ensure that the agency is able to show a series of independently verified, third-party documents that the crew also has access to in support of regular payments to the crew member's account (or that of a related family member – in some cases fishers ask the agency to transfer their salary directly to a family member or equivalent). The key point here is that it is not enough to just show a simple document that can easily be falsified, but to make sure that these documents are verified or audited by someone.

Where a private recruitment agency is used, the skipper/owner shall share a copy of the work agreement with the respective crew member, and confirm that the document is in the language of the respective crew member and that the person has understood it.

Minimum requirements of work agreements and contracts

Each work agreement shall be in a language appropriate for the respective crew member and an example can be downloaded from the [RFS website](#) listed as **FORM OB 16** (except if the inclusion of one or more of them is rendered unnecessary by other national laws or regulations, or a collective bargaining agreement where applicable).

Crew Settling/Payment Record

Crew are to be paid in accordance with their work agreement, in the case of employed crew at least monthly and in line with the monthly minimum wage as recommended by the International Labour Organisation (ILO).

3.2 Fitness to work

Maintaining a certain level of fitness is important for anybody working on a fishing vessel. This includes the physical ability to do the task for which the crew are engaged in and the long term medical fitness necessary to spend prolonged periods of time away from medical assistance.

Basic requirements

Fishing is different from most other types of seafaring because much of the labour is done during extended hours and whilst at sea. Because of this it is necessary to make an assessment of the crew as to their suitability to work at sea. All crews, regardless of the size of the vessels they are on, should complete a questionnaire on their health. The applicant is responsible for facilitating this questionnaire in a language the respective crew can fully understand. If the applicant is concerned by any answers given they should refer the crew member for a medical fitness certificate.

3 / WELFARE



Crew

All crew require a self-declaration of fitness and **FORM OB 26 available from the [RFS website](#) can be used for this purpose.**

Where there is doubt or concerns towards fitness the skipper may request that the crew gets a medical fitness certificate prior to work.

Officers (skipper/mate)

Because of the enhanced responsibility of a certificated officer it is required that they have an up-to-date Medical Fitness Certificate.

Vessels at sea for more than three days

All crews on a fishing vessel that is at sea for more than three days require a Medical Fitness Certificate.

Vessels over 24m

All crews on a fishing vessel that is over 24m require a Medical Fitness Certificate.

3.3 Drugs and alcohol

Alcohol and drugs continue to be contributing factors in accidents on fishing vessels. Make clear how your vessel controls the risk from alcohol and drugs by having a policy in place for the crew to follow.

Legislation

The Vessel Drugs and Alcohol Policy aims to contribute to a safe, healthy and productive work environment by:

- Preventing drugs and alcohol problems through raising awareness.
- Identifying problems at the earliest stage.
- Offering support to those who have a problem.

The RFS requires that a Vessel Drugs and Alcohol Policy includes the following:

- No alcohol or drugs on the vessel.
- No drinking alcohol for a minimum of 24 hours prior to sailing.
- No recreational drugs are ever to be taken on the vessel (excludes smoking tobacco).
- Prescription medication carried aboard must be notified to the skipper and owner.

Skippers and all crew must commit to a prohibition from using alcohol and/or illegal drugs whilst on board vessels and **FORM OB 18 available from the [RFS website](#) can be used for this purpose.**

Drug and alcohol testing

The crew should be made aware that they may be asked to take part in alcohol and drugs tests at any time or location. Failure to cooperate in any testing may result in the termination of the work agreement.

3 / WELFARE



Vessel searches

The vessel will be made available at any time and co-operate in searches for alcohol and drugs at any time or location.

3.4 Safe manning

Safe manning is ensuring that you have sufficient crew to both legally and safely operate the vessel for the intended trip.

UK Mandatory Qualifications

All vessels:

Basic Safety Training – all crew (including skipper).

- Sea Survival – Seafish or equivalent (e.g. STCW, RYA) certificate.
- Health & Safety – Seafish certificate only.
- First Aid – Seafish or equivalent (e.g. STCW, RYA) certificate.
- Fire Fighting – Seafish or equivalent (e.g. STCW) certificate.
- Safety Awareness – Seafish certificate only (required after two years).

Vessels of 16.5m and above:

Deck Officer Certificates of Competency (see manning requirements below)	<ul style="list-style-type: none">• Class 1 - Skipper (Unlimited) or equivalent (e.g. Skipper Full).• Class 2 - Skipper (Limited Area) and/or Mate (Unlimited) or equivalent (e.g. Second Hand Full, Second Hand Special, Second Hand Limited).• Class 3 - Watchkeeper (Limited Area) or equivalent (e. g. Seafish five-day Bridge Watchkeeping certificate).
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Vessels of 750kW and above:

Engineer Officer Certificates of Competency	<ul style="list-style-type: none">• Class 1 – Chief Engineer.• Class 2 – Second Engineer.
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UK Voluntary Qualifications

Skipper (under 16.5m)	<ul style="list-style-type: none">• Seafish Under 16.5m Skipper's Certificate (Restricted) [up to 20nm].• Seafish Under 16.5m Skipper's Certificate (Unrestricted) [beyond 20nm].• Maritime & Coastguard Agency Boatmaster Licence.• Royal Yachting Association Yachtmaster Offshore.• Royal Yachting Association Coastal Skipper.
Engineer (less than 750kW)	<ul style="list-style-type: none">• Maritime & Coastguard Agency 30-hour Approved Engine Course (AEC).• Royal Yachting Association one-day Engine Operator.

3 / WELFARE



UK Mandatory Qualifications

Fishing vessels of 16.5m and above must carry certificated Deck Officers as listed below:

Fishing Area	Length of vessel	Deck officer (Class 1)	Deck officer (Class 2)	Deck officer (Class 3)
Unlimited	40m and over	2	1	
Unlimited	Under 40m	1	1	
Limited	30m and over	1	1	
Limited	24m or more but under 30m		1	1
Limited	16.5m or more but under 24m		1	

Refresher training

Members of the RFS must refresh their basic mandatory training qualifications every five years.

Hours of rest

If the vessel, regardless of size, is intending to sail for three or more days the skipper shall ensure that the minimum hours of rest are allowed for.

Minimum hours of rest shall not be less than:

- Ten hours in any 24-hour period; or
- 77 hours in any seven-day period.

It remains the right of the skipper of a vessel to require the crew to perform any hours of work necessary for the immediate safety of the vessel, the persons on board or the catch, or for the purpose of giving assistance to other boats or ships or persons in distress at sea. Accordingly, the skipper may suspend the schedule of hours of rest and require the crew to perform any hours of work necessary until the normal situation has been restored. As soon as practicable after the normal situation has been restored, the skipper shall ensure that any crew who have performed work in a scheduled rest period are provided with an adequate period of rest. The skipper/owner is responsible for communicating the work hour schedule to crew and for getting their informed consent for this schedule.

3.5 Living arrangements

Accommodation on a fishing vessel should be up to a minimum standard, and the basics of fit for purpose, clean and safe are to be ensured for the vessel, and inspection of the accommodation and provisions needs to be done on a routine basis to confirm they are suitable for life on board.

3 / WELFARE



Fire prevention

- All fire exits/escapes are accessible, operational and do not have mechanisms that shall allow them to be left permanently open.
- All fire extinguishers are functional and serviced within manufacturer's recommended timeframes.
- The fire alarms shall be audible from the crew sleeping quarters.

Air ventilation

- Air ventilation ducts/systems shall be present in all accommodation areas.
- Air ventilation ducts/systems shall be operational and not sealed/blocked.

Sleeping area

- Means of escape to an open deck area shall be unobstructed at all times.
- The sleeping area shall not directly open onto either the engine room or fish room.

Galley Area

- All cooking appliances used on the vessel must be in good structural condition.

Examples of serious failures of vessel safety include:

- Escape hatches are either locked or seized shut.
- Heaters are unsafe to use.
- Fire detection systems are either disabled or inoperative.
- Fire dampers are seized.
- There is no safe means of escape to shore (when berthed).
- Fire doors do not close correctly.
- Unapproved heaters or cookers are being used.

Examples of situations requiring immediate improvement include:

- Fire alarm cannot be heard in the sleeping cabin.
- When LPG heaters are in use suitable carbon monoxide alarms have not been fitted.
- Shore power is unreliable or of insufficient power.
- Heaters require servicing.
- LPG heaters have not been installed in accordance with MGN312.
- Crew are not familiar with emergency procedures.
- Fire extinguishers have not been serviced or are obstructed.

3 / WELFARE



To ensure continued compliance with RFS requirements the following checks should be undertaken at intervals as stipulated.

Monthly accommodation checks – raising the alarm

- Is the fire detection system working?
- Does it work when on shore power?
- Does the alarm sound in the accommodation and sleeping cabins? (Supplement with smoke detectors if necessary.)
- Are any other alarms such as carbon dioxide, liquefied petroleum gas (LPG) and high level bilge fitted and operational?
- Can someone outside the vessel raise the alarm, if crew are sleeping below deck?
- Do the crew know how to call for outside help (e.g. dial 999 or contact the harbour master)? Is there a mobile phone in the cabin?

Monthly accommodation checks – means of escape

- Are the escape routes clearly marked and well lit?
- Do all sleeping cabins have unobstructed means of escape to open deck?
- Is there a safe means of escape to shore?
- If a fire in one location could block the escape, is an alternative available?
- Are all doors and hatches in good working order and easily opened, at least from the inside?
- Are fire doors self-closing or kept closed? (Note: unapproved holdbacks must be removed – only electromagnetic holdbacks linked to the fire detection system will be acceptable.)

Monthly accommodation checks – shore power

- Is the vessel on shore power?
- Is it reliable?
- Is it safely installed with appropriate circuit breaker and sufficient for the necessary services (e.g. a fire pump) all working together, for safety as well as any additional loads for domestic services; such as heating, lighting and ventilation?
- If the shore power fails when the crew are asleep, will they know?
- Can the live aboard crew change over onto ship's power? If so, are any safety systems (e.g. fire/gas detection) not working?

Monthly accommodation checks – fire precautions

- Are heaters safe to use?
- Where necessary is the installation in compliance with MGN 312 (storage of gas and mechanical ventilation)?
- Have heaters been regularly serviced?
- Are gas and carbon monoxide detectors provided?
- Are other heaters clearly away from combustible materials?
- Is the ventilation working? (Check that the crew have not tried to block them up.)
- Are fire dampers including external ventilation flaps in working order?

3 / WELFARE



- Are unapproved cooking or heating appliances being used? (e.g. some crew have been found cooking with portable gas cookers in their cabins.)
- Are all electric appliances safe, with correct wiring, fuses? (e.g. radios, TVs, toasters, kettles, phone chargers, etc.).
- Have the crew been familiarised with these basic safety precautions, including their escape routes and safety systems?
- Have the crew been instructed in how to start a fire pump?
- Are fire extinguishers available, serviced and ready for immediate use?

Basic standards of construction – general living space

- Passageways should be at least 700mm wide.
- No conjoined air spaces with engine or fishrooms.
- Exits clearly marked.
- Accommodation space has permanent sign of capacity of space on entrance.
- Crew accommodation can run on shore power or vessel power.
- Adequate lighting in all crew spaces.
- If there are not two alternate power sources for lighting – emergency lights must be available.
- Heating / cooling must be sufficient and safe.
- Adequate ventilation.

Basic standards of construction – sleeping area

- Headroom should be at least 2m.
- Minimum floor area 0.75m per crew in space.
- Berth size minimum size 1.9m x 680mm.
- Lowest berth must be 300mm above floor.
- Bedding should be of suitable quality and in good condition.
- Crew members should have suitable and lockable storage facilities on board.

Basic standards of construction – galleys

- Sufficient size to accommodate all crew members.
- Should have enough space for recreational activities.

4 / CATCH SAFETY AND TRACEABILITY



4.1 Food (catch) safety control systems

Background

Customers expect the food they purchase to be safe and wholesome to eat. As primary food producers, fishermen are legally responsible to ensure that the fish and shellfish they sell meet customer expectations and legal requirements. Failure to do so can result in prosecution, and loss of reputation and business. Adopting a systematic approach to the handling and storage of your catch can help reduce this risk.

One approach to maintaining food safety is a widely used system known as Hazard Analysis and Critical Control Point, or HACCP. By adopting systems based on the HACCP principles, fishermen can maintain their catch safely and demonstrate that they have taken all reasonable precautions to minimise risk. This will give reassurance to the onward supply chain and provide a legal defence in the event of cases being taken to court.

Common hazards which may affect the catch

Put simply, a hazard is anything that has the ability to cause harm. Irrespective of the types of food produced there will always be hazards present and if they are not properly controlled can cause the food to become contaminated and potentially unsafe to eat.

There are three general types of hazard: physical, chemical and bacterial. Physical hazards in fishing operations include items such as unwanted foreign bodies, splinters, slivers of glass, rust and paint flakes. Chemical hazards would include diesel, hydraulic fluids, oils, greases and cleaning agents. Although generally associated with catch quality as opposed to catch safety, bacterial hazards can sometimes cause illness and it is essential that all bacterial contamination is controlled as though it would cause illness.

Identifying hazards

Having identified the potential hazard types that exist, it is then important to identify where these hazards may occur on the vessel and either eliminate them or control them to such a degree that they cannot cause harm. Where vessels are crewed it is recommended that all of the crew contribute towards identifying the hazards as crew working in different areas of the fishing operation may have better insight into the hazards associated with their particular work area or process.

To identify all the potential hazards it is useful to break down the fishing operation into stages.

At each stage decide if any of the hazard types identified earlier are present and if so must be controlled.

The table below can be used as an aid to identify likely hazards at each stage of the fishing operation and the types of checks and controls the vessel can put in place to eliminate or control the hazards. The table uses the example of a whitefish vessel and is not exhaustive but gives a good indication of the types of checks and controls that need to be implemented.

4 / CATCH SAFETY AND TRACEABILITY



Typical stages and associated hazards likely within a whitefish catching operation

Stage	Hazard	Controls
1. Bulk fish into hopper, pound or other reception area	<p>Physical Dangerous or unwanted foreign bodies found in nets.</p> <p>Chemical Contamination from any diesel spillages, or other chemicals, on deck.</p> <p>Bacterial Bacterial growth caused by high temperatures or delay in working fish.</p> <p>Also, introduction of bacteria from poor staff hygiene, or dirty fish holding areas.</p>	<p>Constant checks by crew while working with fish or nets. Clear away any objects from nets before any further tows are made. High standards of crew hygiene.</p> <p>Clean any spillages immediately, and before any hauls are brought on board. Store all chemicals well away from fish handling or storage areas.</p> <p>Ensure fish is gutted, washed, boxed and iced as soon as possible after each haul is made.</p> <p>Good standard of crew hygiene. Fish unloading areas kept clean and in good condition.</p>
2. Fish selection	<p>Physical Dangerous or unwanted foreign bodies.</p> <p>Chemical Contamination from any diesel spillages, or other chemicals, on deck.</p> <p>Bacterial Bacterial growth caused by high temperatures or delay in working fish.</p> <p>Also, introduction of bacteria from poor staff hygiene, or dirty fish holding areas.</p>	<p>Constant visual checks by crew when working with fish; keep fish working areas clean and in good condition.</p> <p>Clean any spillages immediately, and before any hauls are brought on board.</p> <p>Ensure fish is selected as soon as possible after haul is landed.</p> <p>Good standard of crew hygiene, and fish holding areas are kept clean and in good condition.</p>
3, 4, and 5. Gutting, washing, and draining the catch, and discarding of guts	<p>Physical Dangerous or unwanted foreign bodies in fish working areas.</p> <p>Chemical Contaminants present in dirty water.</p> <p>Also, tainting of fish from cleaning chemical residues.</p> <p>Bacterial Introduction of bacteria from water, or from poor staff hygiene, or equipment.</p> <p>Also, rapid growth of bacteria if fish is warm, or if there is a delay in processing fish.</p>	<p>Keep all fish working areas and items of equipment clean and in good condition.</p> <p>Use only clean seawater for washing fish.</p> <p>Ensure all work surfaces are fully rinsed after cleaning with chemicals.</p> <p>Use only clean seawater for washing fish.</p> <p>Keep all fish working areas and surfaces clean. Good standard of crew hygiene.</p> <p>Ensure guts from newly-gutted fish do not come into contact with fish waiting to be gutted, or other baskets or boxes used for holding fish.</p> <p>Gut and wash fish quickly, box and ice fish without delay.</p>

4 / CATCH SAFETY AND TRACEABILITY



<p>6. Transfer to hold</p>	<p>Physical Dangerous or unwanted foreign bodies in ice or boxes.</p> <p>Chemical Contamination from any diesel, oils or grease in boxes.</p> <p>Bacterial Introduction of bacteria from poor staff hygiene, or dirty equipment.</p>	<p>Ensure chutes and/or boxes are kept clean and in good condition.</p> <p>Ensure all cleaning chemicals are thoroughly rinsed off after chutes and/or boxes are cleaned.</p> <p>Ensure chutes and/or boxes are kept clean and in good condition.</p> <p>Good standard of crew hygiene.</p>
<p>7 and 8. Fish boxed, packed and iced</p>	<p>Physical Dangerous or unwanted foreign bodies in ice or boxes.</p> <p>Chemical Contamination from any diesel, oils or grease in boxes.</p> <p>Bacterial Contamination from dirty boxes and/or ice.</p> <p>Also, rapid growth of bacteria caused by warm temperatures.</p>	<p>Constant checking by crew at all times when handling, boxing or icing fish. Remove any objects found.</p> <p>Check that boxes are free from any chemical contaminants before filling with ice or fish.</p> <p>Check that boxes are clean before filling with ice or fish. Clean any dirty boxes before use.</p> <p>Do not use dirty ice. Ensure ice is stored in a clean and hygienic area.</p> <p>Ensure sufficient ice is used to keep fish cold until it is landed.</p>
<p>9. Storage in hold</p>	<p>Physical Dangerous or unwanted foreign bodies.</p> <p>Chemical Contamination of fish from diesel or other chemicals.</p> <p>Bacterial Contamination of stored fish from dirty storage areas.</p> <p>Also, rapid growth of bacteria caused by warm temperatures.</p>	<p>Keep all fish storage areas clean and in good condition.</p> <p>Clear up any diesel spillages as soon as possible, and keep fish storage areas clean.</p> <p>Keep the fish hold clean.</p> <p>Ensure sufficient ice is used to keep fish cold until it is landed. If fish hold is refrigerated, then this equipment should be switched on as soon as practical after going to sea.</p>

Setting limits

It is not possible to remove all the hazards associated with the production of fish and shellfish. For example hydraulic fluid is a potential contamination risk where haulers are fitted but is necessary to make them work, so this risk cannot be eliminated entirely. It is therefore important to decide limits at which action must be taken to control or eliminate hazards. These are known as critical limits and will vary according to the type of hazard.

It is important therefore to decide limits at which actions must be taken to control or eliminate the hazards. These are known as critical limits and these will vary according to the type of hazard. E.g. diesel, none present on catch, visible ice on stowed catch.

4 / CATCH SAFETY AND TRACEABILITY



Monitoring and controlling the hazards

Once all potential hazards have been identified and critical limits set it is important to make regular checks to ensure that none exceed the limits set. If they do then there is potential for the catch to be unsafe.

As well as setting limits for the identified hazards it is vital to have a plan to control hazards and a plan of action when things go wrong. This is very important as it is the catch that was produced/held when things go wrong that has the potential to cause the most harm.

Record keeping

Although the primary role of a food safety control system is to support the safe production of food, it can also help businesses demonstrate their understanding of the hazards present and how to control these. This can also help provide a legal defence in the event of alleged problems. In order to do this, there must be documented evidence of the control system. Such documents are evidence of the approach taken to ensure safe production.

FORMS OB 29 to OB 33 available from the [RFS website](#) can be used for this purpose.

Reviewing the system

With many vessels altering fishing methods on a regular basis it is important that the system in place for previous fishing activities still covers all the potential hazards associated with the new fishing operation. For example a vessel moving from targeting just shellfish over to whitefish will have extra hazards associated with gutting and temperature control.

For vessels making such changes on a regular basis this system review may be a little more time consuming but once set up will cover all possibilities and ensure that catch is safe regardless of fishing operation.

Scromboid food poisoning

Although not occurring frequently there are occasions where fish species such as mackerel and tuna can cause specific health issues due to the formation of histamine within their bodies when not chilled quickly enough after capture. Herring, sardines, sprat and anchovies are also at risk.

The compound histidine exists naturally in many types of fish, and at temperatures above 16°C (60°F) on air contact it is converted to histamine. Histamine is not destroyed by normal cooking temperatures, so even properly cooked fish can be affected. Ingestion of histamine in some cases can cause severe allergic reaction, so when engaged in fisheries, targeting species such as mackerel and other species mentioned above it is very important to set appropriate temperature control limits both in terms of target temperatures, and times to reach target temperatures.

4 / CATCH SAFETY AND TRACEABILITY



4.2 Pest control

Fishing boats have a legal responsibility to ensure that the presence of pests does not present a food safety risk to the catch.

Any type of animal on board a fishing boat may constitute a pest. Pests will be attracted to the boat either because of the availability of food and/or the provision of shelter from the environment.

Pests have the potential to carry two types of contamination hazard into the fish handling and storage areas. Firstly, they harbour and carry germs, both in terms of food related illness and other types of disease. Secondly, they present a foreign body risk to the fish; this can be from dead specimens of the pests themselves, or faeces, fur, feathers, etc.

Whilst at sea, arguably the greatest pest problem will be encountered from seabirds. When boats are in harbour however, infestation from insects and rodents may also present a significant hazard.

Food premises ashore can be proofed very effectively against pest ingress. This is not always possible with fishing boats so other preventative measures are necessary.

Ashore

- Ensure all working areas have been fully cleaned and no waste fish matter remains on deck areas.
- Ensure that all nets and gear are free from waste fish matter and debris.
- Ensure all handling equipment is clean and free from waste fish matter.
- Ensure all containers are clean and stored in an area where they cannot be contaminated from seabird faeces.
- Do not take clean boxes on board until the boat is ready to sail, unless they can be stowed in an area that will prevent them from possibility of contamination. It is acceptable to place the cleaned boxes back in the fishroom hold for stowage for the next trip.
- Boats with holds should keep the hatch doors shut when not in use.
- Doors to accommodation and/or wheelhouse should be kept shut.
- Open-decked boats should be washed down when re-sailing.
- Any evidence of pests must be investigated and appropriate action taken.
- Any sightings of pests that can come into direct contact with the catch during stowage or in the crew's accommodation or galley must be reported to the skipper and should be recorded.
- Any infestation of pests that occur in the storage areas or living accommodation must be eliminated by suitable means and all affected areas must be disinfected prior to use.
- The services of a competent, professional pest-control company should be sought, if necessary, to eliminate any infestation problems.

At sea

- Upon sailing, any exposed fish handling areas and containers should be re-cleaned before the first fish are taken on board.
- During fishing all waste fish and offal should be discarded correctly from the boat.
- 'Clean-as-you-go' policies should be a matter of routine and should be conducted between hauls.

4 / CATCH SAFETY AND TRACEABILITY



- Bird faeces deposited on open deck areas and equipment must be washed off in a timely manner. Birds will be around after the offal is discarded from the vessels so this would be a good time to re-clean the contaminated areas.
- The protective clothing of the crew must be cleaned regularly and as necessary.
- Nets and gear must be regularly checked and kept free from waste fish-matter and debris.
- Any evidence of pests must be investigated and appropriate action taken.
- Any sightings of pests that can come into direct contact with the catch during stowage or in the crew's accommodation or galley must be reported to the skipper and should be recorded.
- Any infestation of pests must be eliminated and the affected areas must be disinfected prior to use.

4.3 Personal hygiene requirements for crew

Crews on board fishing vessels are first and foremost fishermen but they are also classed as food handlers and so have a responsibility to handle the catch in ways which reduce the risk of contamination.

Food handlers may be classed according to the level of risk associated in the handling of a particular type of food. Fishermen are involved at the very start of the food supply chain; they harvest a natural resource and bring it ashore for further processing. The food safety risks in handling the fish at this stage are considered low. The Chartered Institute of Environmental Health (CIEH) has classified food handlers according to this level of risk. Most fishermen would be considered as a Category A (2) food handler.

This is defined as a person who is involved in working with produce which is subject to basic grading and washing but which will be subject to further processing prior to consumption. However, a crew member that cooks and stores food for the boat should have a higher level of food hygiene understanding to ensure that they do not inadvertently give themselves and the rest of the crew possible food poisoning from the meals they prepare.

Catch may spoil more quickly if it is contaminated as a result of poor crew hygiene. The crew should therefore be fully aware that they have a key role to play in assuring and maintaining the quality of the catch. Good basic personal hygiene awareness should form the basis of a pre-work hygiene induction, and the skipper should not allow any new crew to start handling catch until they understand and accept these requirements.

The skipper should ensure that all crew are fully aware of good hygiene work rules and that they adhere to them when handling, packing, storing and landing the catch.

Good practice crew hygiene work rules

- All crew must wear protective clothing and keep it clean.
- Crew must only eat, drink, or smoke outside the handling and storage areas.
- Crew must wash their hands before handling fish, and particularly after visits to the toilet.
- If gloves are used for handling fish they must be washed frequently.
- Crew must not, blow noses, cough, sneeze or spit over fish when handling it.

4 / CATCH SAFETY AND TRACEABILITY



- Waterproof plasters must be used to cover cuts and grazes.
- Crew must inform the skipper if they are suffering from vomiting, diarrhoea or other stomach upsets that could signify potential food poisoning.

4.4 Traceability

Seafood traceability and labelling regulations are in place to ensure that seafood can be tracked throughout the supply chain and to ensure it is described accurately to consumers. Seafood traceability is required for the purposes of general food law, fisheries control and fish marketing. Labelling legislation ensures that anybody placing seafood on the market labels seafood clearly and accurately, which makes buying seafood easier and safer for consumers. Seafood labelling regulations are important in maintaining traceability and sustainability within the industry.

Seafood is subject to much of the legislation which all foodstuffs must comply with, but there are also seafood specific regulations in place. For more information on traceability and labelling please refer to information contained within the RFS sector specific Compliance Support Guides or visit www.seafish.org/industry-support/legislation/traceability-and-labelling

5 / ONBOARD FOOD PREPARATION



5.1 Personal responsibility

All crew members have a responsibility to the vessel and the rest of the crew not to do anything that may cause harm or fail to do anything that may prevent harm. Any crew member tasked with preparing food on board the vessel has the additional responsibility of ensuring that food is safe to eat and will not harm crewmates. This includes following the basic requirements for personal hygiene, food safety and the reporting of any occurrence that may pose a hazard. Crew are required to report any illness (including intestinal problems) that could affect food safety on board, or any allergy or food intolerance that may affect health and wellbeing. It should be reported to the skipper or other responsible person at the earliest opportunity.

5.2 Principles of food hygiene for food handlers

Whether you are preparing food in a five star hotel or on a vessel, the same basic principles of food safety apply.

Food poisoning usually occurs because a series of mistakes combine to make the food prepared unsafe to eat. The three most common mistakes that lead to food poisoning are:

- The contamination of a high risk food by a food hazard, usually dangerous or pathogenic bacteria.
- The multiplication of the bacteria over time to dangerous levels.
- Failure to render the food safe by destroying the bacteria and any toxins by thoroughly cooking the food.

Not all toxins in food are destroyed by cooking so we cannot rely on cooking to keep our food safe. Instead we rely on good food handling practices such as those described in the rest of this section of the guide to avoid and control the food hazards that can potentially cause mild discomfort, illness or even death if you get it seriously wrong.

5.2.1 Food hazards

Food hazards are anything that could cause harm to the person who consumes food. The hazard types will be the same as for the catch. Usually we talk about four types of food hazard:

- Physical hazards – bits of bone, shell, glass, metal, wood etc in the food.
- Chemical hazards – cleaning chemicals, pesticides, biotoxins (from scallops for example). Chemicals do not always make food taste unpleasant.
- Biological hazards – bacteria, viruses and molds are the most common forms of biological contamination.
- Allergens – some people are allergic to peanuts, dairy products or some additives.

Physical hazards can cause choking or serious injury.

Chemical hazards are often responsible for food being spoiled and occasionally more serious poisoning which can lead to long term damage or illness.

Biological hazards can cause food poisoning (usually short term) or food borne disease (often a long term problem), while the problems caused by allergens can range from mild symptoms to full blown allergic shock which can be fatal.

5 / ONBOARD FOOD PREPARATION



5.2.2 Contamination and cross contamination

Contamination can occur at any time. It may happen before the food is delivered to the vessel, or it can happen on board due to poor hygiene practices. Contamination can happen during storage, preparation and even during serving. Poor personal hygiene and bad temperature control can make it worse.

Sources of contamination are often the person preparing the food, raw food itself (particularly raw meat), pests (flies and rodents particularly), waste food, the general environment, food contact surfaces (knives, cutting boards etc) and chemicals kept on board the fishing vessel.

People commonly harbour food poisoning bacteria on their skin, nose, mouth and intestines. We are covered with bacteria both inside and out. We can pass on these bacteria by touch, sneezing, coughing or by the steady light rain of dandruff and flaking skin cells that affect us all.

Raw food, particularly meat is a great source of food poisoning bacteria. Even unpurified shellfish may be a source of bacteria such as E coli and viruses such as Norovirus, both of which come from untreated sewage that is discharged into the sea.

Whatever the source of the contamination, we can reduce the risk of cross contamination by adopting a few simple practices. These practices are largely aimed at reducing cross contamination by food poisoning bacteria. The problem with bacteria is that wherever we find them they will stay. But, they will also hitch a ride on your hands, utensils, cutting boards and transfer over to other foods. Once there they will multiply if they are given enough time and are kept at the right temperature. Under ideal conditions, bacteria can multiply every 20 minutes or so. One bacterium becomes 2, then 4, then 8. Before you know it there are so many that you don't need a microscope, you need a bucket!

We can reduce the risk of all kinds of contamination by:

- Keeping raw food away from ready-to-eat food at all times.
- Keeping all food covered during storage.
- Cleaning and disinfecting food contact surfaces between tasks.
- Using colour coded chopping boards and knives, and keeping them clean between tasks.
- Using single use disposable cloths or paper towels – you wouldn't believe how quickly bacteria can infest an apparently clean but damp tea towel.
- Washing your hands properly before and after handling raw food and before handling ready-to-eat food.
- Maintaining high standards of personal hygiene.
- Storing and disposing of waste correctly.

5.2.3 Food poisoning or food borne disease

Food poisoning is caused by the bacteria that can multiply on the food before it is eaten. Food poisoning usually takes hold within a few hours of the food being eaten. In fact some forms of food poisoning are so quick that the symptoms (vomiting for example) happen before the meal is fully consumed!

Food borne disease is rather slower taking days rather than hours to show itself. Symptoms are often much more complex and serious cases can lead to organ damage and failure.

5 / ONBOARD FOOD PREPARATION



Whether it is an allergic reaction, food poisoning, chemical contamination or some other food related danger, the means to avoid it are simple:

- Use safe ingredients.
- Store them safely.
- Prepare and handle them correctly.
- Maintain a hygienic environment and dispose of waste appropriately.

5.3 Working environment

The working environment on a fishing vessel is almost always cramped and dangerous. Whether in the engine room, wheelhouse, in the hold or on deck there are hazards to our health and safety, hazards that as experienced fishermen you manage and deal with on a day-to-day basis.

Why should the galley be any different? Just as the engine room and decks are kept free of clutter and appropriately clean, so should the galley. Just as there are safe ways of working on deck, there are safe ways of working in the galley.

An incident on deck can lead to one crew member suffering an injury. An incident in the galley can lead to the entire crew being laid low.

The equipment and food contact surfaces in the galley area should be clean and easily cleanable. Materials should be appropriate for a food preparation area, and the system of work used should keep low and high risk foods apart, waste in a safe place and everything must be easily accessible for cleaning. High-risk foods can be defined as “any ready-to-eat food that will support the growth of pathogenic bacteria easily and does not require any further heat treatment or cooking)”. Low-risk foods are ambient-stable such as; bread, biscuits, cereals, crisps and cakes (not cream cakes).

Where possible there should be a route for food to come from storage, be prepped, cooked, dished out and served. Cooked food should go one way and waste another without crossing over. This is going to be a challenge on even the largest fishing vessels, but with a little thought you will be able to improve on what you currently have.

Take a look at the galley area on your fishing boat. Are the surfaces and materials:

- Easily cleaned?
- Kept clean?
- Hardwearing?
- Waterproof?
- Light coloured (so dirt can be easily seen)?
- Undamaged (cracked, scoured, rough)?

In short are they suitable for a food preparation area?

5 / ONBOARD FOOD PREPARATION



5.4 Personal hygiene

People are often the commonest source of food poisoning bacteria and hands are the easiest way of contaminating food. Food handlers, must maintain high standards of personal hygiene to avoid contaminating food and causing illness.

It is an absolute requirement that you follow the following simple but essential practices.

Wash your hands – before you start to prepare food, during food preparation and after preparation. When in doubt wash your hands. Wash your hands before and after going to the toilet, after eating, smoking, sneezing, coughing, handling waste, chemicals of any kind, between handling high risk and low risk foods, handling external food packaging, handling known allergens etc. Why do you need to wash your hands so frequently? Almost everything you touch will carry a food hazard, particularly bacteria. When you smoke or eat you may easily pick up bacteria from your mouth. Sneezing and coughing can spread diseases. If you have been handling fish or shellfish on deck then you and your outer clothes will be contaminated. And when we say “wash your hands” we don’t just mean a 20 second rinse under the tap. Effective hand washing is something to be learned and applied consistently.

Personal hygiene is more than just bathing often and washing your hands.

- 1 Fit for work – have you recently suffered from food poisoning or had a food borne illness? If you have then you shouldn’t be preparing food for others until you are declared fit to do so.
- 2 Skin conditions and infections – if you have a weeping skin condition, a wound that cannot be properly covered by a waterproof plaster or anything else that could lead to contamination then you may be unfit to prepare food for others.
- 3 Food preparation protective clothing – that’s clothing to protect the food from you! It includes a head covering to keep hair and dandruff out of the food. It must be clean and hygienic. It doesn’t have to be white. It doesn’t have to have built-in buoyancy nor protect you from the weather! It only needs to be clean and worn whenever you are working with food, and removed when you are not working with food.
- 4 Bad habits to be avoided:
 - a. Have fingers with dirty nails.
 - b. Not washing your hands after going to the toilet.
 - c. Use your fingers to taste food.
 - d. Re-use a spoon to taste food a second time.
 - e. Blow into a bag to open it or lick your fingers to separate packaging materials.
 - f. Eat, drink or smoke while preparing food.
 - g. Cough, sneeze, scratch or pick any part of your anatomy!

There is no law against doing any of these bad habits, except when you do them in a food preparation area or while handling food during preparation for others.

5.5 Purchase and receipt of food and supplies

Buy your food and other supplies from a reputable supplier with high standards of food hygiene. If the food delivered is poorly packed then cross contamination may have happened before you get the food and that will be difficult to detect.

5 / ONBOARD FOOD PREPARATION



Select the least hazardous materials or ingredients. Chicken pieces rather than a whole chicken avoids the need to cut up poultry and reduces the chance of cross contamination. Ready prepared vegetables mean less handling and less risk. Make sure that everything is in date enough to last out the entire trip. Canned goods usually have a long shelf life, at least until they are opened. Chilled goods must still be chilled when delivered, and frozen foods should be rejected if they are not cold enough. What is the state of the delivery vehicle and the driver? Unsatisfactory delivery vehicles or drivers may indicate unsatisfactory deliveries. Of course you may buy all of your supplies yourself from your local supermarket. If that's the case then you can watch out for cross contamination risks and threat to temperature control yourself.

5.6 Storage

Essentially there are three types of food storage – frozen, chilled and ambient and each food stuff should be put in the appropriate store. Failure to do so can lead to all kinds of problems caused by bacterial multiplication, growth of molds, spoilage of food, pest infestations and taints.

Low and high risk foods in the same kind of store should be kept separate. In a chill store (refrigerator) keep cooked ready-to-eat food in a covered container up near the top. Keep the raw meat in its packaging in a container at the bottom. After all, who wants raw blood dripping onto their cooked food?

Highly perishable foods should be stored under chilled conditions. This may include cans and jars that have been opened. Bacterial multiplication can still occur, but it is more likely that spoilage bacteria will render the food unfit to eat before it becomes unsafe. Frozen food should be kept below -18C. Dry goods should be kept in a cool dry, vermin proof place that is kept clean. Hazards include dirty/contaminated delivery cartons, leaking containers and out of date stock. Soil from root vegetable and chemicals may also present a hazard.

Canned goods are usually stored in a dry store. Watch out for damaged, dented, rusty or out of date canned goods as they will present a hazard.

Chiller/refrigerator good practice guide:

- The chiller should provide easy access for cleaning and stock rotation.
- The internal light should operate, how else will you see what is inside.
- Keep between 1°C and 4°C. Check this with a thermometer permanently in place inside the chiller.
- Defrost and clean according to the galley cleaning schedule.
- Do not overload the chiller. Leave space between products.
- Rotate stock – first in first out.
- Hot food must have cooled down before being placed in the chiller.
- Raw and high risk food at the bottom. Low risk foods at the top.
- Everything covered or in a container.

5 / ONBOARD FOOD PREPARATION



5.7 Temperature control

Temperature control is the single most important factor in avoiding food poisoning due to bacterial multiplication. Some key temperatures:

- Frozen food = below -18°C .
- Chilled food = below 5°C and above 1°C .
- Hot holding = above 63°C .
- Danger Zone = 5°C to 63°C .
- Cooking = core temperature of the food reaches at least 75°C to ensure food poisoning bacteria are killed.
- Reheating cooked food = minimum temperature of 82°C at the core of the food to be safe.

Thawing frozen food – some foods can be cooked from frozen. Large pieces of meat/whole chickens will take a lot longer to thaw – that's why chicken pieces are easier/safer to handle.

Thawing a large piece of meat on board a fishing vessel can be such a problem that it's best avoided at all costs. The Danger Zone (5°C - 63°C) is the temperature range in which food poisoning bacteria multiply well. Try and minimise the time food spends in this zone – chill hot foods quickly and heat chilled foods quickly and thoroughly.

Some examples of how it can go wrong:

Stews and gravy that are gently simmered in a deep pan will have cool spots where the temperature is below 63°C – a perfect breeding ground for common bacteria that produce a toxin (poison) that no amount of later cooking will destroy. The level of toxin increases in the gravy (or sauce or stew or soup) until there's enough there to cause a serious amount of food poisoning. To avoid this bring gravy up to temperature quickly and either keep well above 63°C or serve as soon as it's hot. Use a pan lid to avoid cold spots

Cooked rice that is slowly cooled, kept overnight before being reheated may also contain a toxin producing bacteria that will have you vomiting a few hours after eating. Chill the rice quickly using cold water, keep chilled until you are ready to reheat it.

5.8 Safe water supplies

Safe and potable water for drinking and food preparation is essential for the health of the crew, which is why it is now a legal requirement.

Whatever system is used to supply safe drinking water on board, whether it is bottled, shore-side delivered or produced on board, it must be safe, potable and free from harmful contaminants and chemicals.

Problems can arise when perfectly safe water is stored if the storage system is not regularly checked – when was the last time checks were carried out on your vessel?

Water produced on board by a filtration or distillation system may not always be safe for long term consumption as the seawater it is produced from may be contaminated by pesticides and other contaminants.

5 / ONBOARD FOOD PREPARATION



These issues are of less concern to fishing vessels that have short trip lengths, and who regularly inspect and maintain their water supply and storage equipment.

See MGN397(M+F) Guidelines for the provisions of food and fresh water on merchant ships and fishing vessels for more information on this.

5.9 Cleaning

The purpose of cleaning is to keep food safer by removing contamination by bacteria, viruses, molds, chemicals, allergens or physical contaminants.

Cleaning also keeps your working environment safer by, for example, removing slip and trip hazards. Cleaning can be broken down into two main types – clean as you go and scheduled cleaning.

Clean as you go is exactly as it sounds. As you work in preparing and cooking food, serving and clearing up you should clean as you go. Clear and disinfect your work area between tasks. Not only does this keep on top of the problem, it reduces the opportunity bacteria have to multiply.

Scheduled cleaning is the process at the end of a trip. You must set aside time for scheduled cleaning even after short trips.

Deeper cleaning requires the moving of equipment to get at the harder to reach areas to clean them. When this is done at the end of a trip it is an ideal time to look out for any signs of pest infestations and to carry out any required maintenance.

Cleaning = time + chemicals + effort + method

1. Time

Take your time cleaning. If it's clean as you go then take the time to wipe spills as they occur. Take the time to wipe down surfaces regularly with a food safe disinfectant or sanitiser. And take the time to remove waste so it doesn't build up.

If it's a deeper clean then it will take more time and you'll need to pick the right time so you can see the job through without interruption.

A cleaning schedule is a way of being certain what to do and when to do it. A cleaning schedule clearly posted in the galley area will act as a reminder to you and the rest of the crew that cleaning is important.

2. Chemicals

Water alone isn't enough. Cleaning should be helped along by the correct use of disinfectants, detergents and/or sanitisers.

Detergents = essentially these are high tech soap solutions that are used to remove dirt and grease, and to reduce the level of bacteria. They can get your food contact surface looking nice and clean, but as they DO NOT KILL bacteria, the surface will not yet be safe.

5 / ONBOARD FOOD PREPARATION



Disinfectants = chemicals that kill bacteria and reduce their numbers to a safer level. Disinfectants do not work well where dirt and grease are still present so best to use a detergent first. Hot water (above 82°C) and steam make great disinfectants. An effective way of cleaning a washing up pad is to clean it with disinfectant and then disinfect it with a three minute soak in boiling water. This is best done before doing the washing up. A soak in bleach solution can achieve the same result in a couple of hours.

Sanitisers = chemicals that combine detergent and disinfectant properties if used correctly – usually on surfaces where there is little dirt or grease. Use detergent then disinfectant for most things, and sanitisers for light work.

3. Effort

You cannot clean effectively without putting in some effort. A gentle wipe down of the galley table for instance just won't do. Put a bit of effort into it. Wash and wipe, wash and wipe and then disinfect.

5.10 Waste disposal and pests

Food waste must be removed from food areas as soon as possible and not allowed to build up. Food waste should be collected in bins that have tight fitting lids and are easy to clean. Food waste should be stored safely in areas that can be cleaned, are safe from pests, and do not cause other hazards until disposal. Improperly stored food waste is the main cause of pest infestations such as insects and rodents.

Pests on a fishing boat can be a problem if they become established as there are so many out of the way places they can hide. Rats and cockroaches can be a persistent problem so don't leave waste food around to attract them in the first place, and look out for the signs of their presence. If you find them on board then you will need the services of a professional exterminator.

Apart from waste, pests may also survive on the food in storage, so watch out for the tell tale signs of damage to packaging;

- Holes gnawed into packaging.
- Droppings (typically like black rice).
- Grease marks from rodent fur.
- Smell and odours – the smell of cockroaches is very distinctive.

6 / THE ENVIRONMENT



6.1 Introduction

What is responsible environmental behaviour?

Responsible environmental behaviour is catching seafood without harming other species while protecting the environment and supporting sustainable futures for fishermen. Healthy fish stocks depend on healthy seas and responsible management. This includes responsible practices (such as appropriate litter disposal; recording wildlife interactions); supporting fishery science (such as having onboard observers; participating in science partnerships); and complying with voluntary schemes such as seasonal closures.

This element of the guide provides RFS applicants with the necessary knowledge and support to meet the requirements of RFS Standard Core Principle 5: Care for the Environment (behave responsibly, respecting the environment). The RFS Standard performance indicators for this core principle include:

- Waste management.
- Vessel maintenance.
- Recovery of lost fishing gear.
- Scientific engagement .

6.2 Environmental commitment

The RFS requires each applicant to create an effective Environmental Policy specific to their vessel. The policy will demonstrate your commitment to responsible behaviour. Each policy will vary according to the type of fishery you operate and gear you use.

The policy will commit you to:

- Take all necessary and appropriate actions to ensure that the fisheries and ecosystems in which the vessel operates are accessed responsibly, to preserve them for current and future generations.
- Comply with all environmental and other laws applicable to fisheries and the wider marine environment.
- Cooperate with regulatory authorities in pursuit of responsible management of the fisheries in which you operate.
- Take all reasonable efforts to minimise and where possible eliminate unwanted by-catch.
- Actively review, and adapt where possible, devices and/or measures that will mitigate and where possible eliminate the risk of endangered, threatened or protected (ETP) species from being entangled with their gear.
- Participate in schemes that supply data to scientists that will contribute to effective fisheries management.
- Ensure the vessel is well maintained and that any waste produced, and any disused fishing gear, is appropriately disposed of on land, and recycled where possible, as detailed in the Waste Management, Vessel Maintenance and Fuel Conservation Policy.
- Provide training and support to all crew members to actively support and participate in the environmental policies of their vessel.

6 / THE ENVIRONMENT



6.3 Waste management

RFS applicants must adopt a system on board their vessel to minimise the amount of waste that is generated and recycle the waste once they are back in port. In addition, where safe and practical to do so, a vessel applicant will be expected to collect litter as part of their normal fishing operations and transport back to port for suitable disposal and recycling.

Historically, vessels have dumped their waste materials into the seas with little regard for the environmental impact. Today, this is no longer acceptable. Not only have volumes of waste dramatically increased, but there are many types of non-biodegradable plastic and other synthetic materials. These can be directly hazardous and toxic, or can degrade to be harmful to humans, marine creatures and the wider marine ecosystem.

In addition to the environmental damage described above, there are very real costs incurred by fishing vessels when such waste material is incidentally caught during fishing. Frequently gear can become damaged, fishing time may be lost, water inlets can become blocked, propellers fouled, or the catch may even become contaminated; all through the unwanted presence of waste material in the seas. All RFS certified vessels must take responsibility to reduce this risk by preventing waste going into the sea.

The disposal of all plastics into the sea is prohibited by law. There may be exemptions to this. However, vessels within the RFS must not discard any plastic or inorganic waste at sea at any time.

RFS vessels must actively participate in organised waste collection schemes. If one is not available, the applicant must demonstrate how they reduce the amount of waste they produce on board, and how they dispose of any waste collected during their normal fishing operations.

6.4 Vessel maintenance

The RFS Standard requires that the vessel applicant shall adopt and commit to a plan to improve fuel efficiency for their method of fishing. This will require:

- Understanding where energy is expended in a fishing vessel.
- Identifying what aspects can be influenced by the vessel operator (skipper), the vessel designer/builder or the engineer.
- That both operational and technical measures are recognised as able to help with fuel efficiency.

Operational measures include:

- Ensuring fishing gear is correctly matched and rigged for the vessel, conditions and target fishery.
- Reducing engine speed – the easiest and least expensive action a skipper can take to save fuel, particularly whilst steaming.
- ‘Good housekeeping’ such as maintaining engine and hull efficiency through regular maintenance.

Technical measures include:

- Ensuring the propulsion package is best suited to the vessel and operation – correct selection of engine, gearbox and propeller.
- Using alternative fuel and related technologies.

6 / THE ENVIRONMENT



- Considering fuel efficiency when designing new vessel builds – hydrodynamics and beam ratios are important.

In addition, economic benchmarking (offered by Seafish) can provide relevant data on the financial performance of a vessel, compared to the 'best-in-class'.

The Seafish guide to improving fuel efficiency published in 2008 gives guidance on factors affecting fuel efficiency. The following text draws from that document.

1. Optimising gear and fishing methods

The biggest contributors to drag are the netting itself and the trawl doors. Ensuring fishing gear is correctly matched and rigged for the vessel, conditions and target fishery is key to achieving fuel efficiency.

Options for optimising gear and fishing methods include:

- Undertaking an examination of how much of the overall towing resistance of the gear is due to the different individual components, such as trawl doors and netting. Modifications to existing gear can substantially decrease fuel consumption, considering that 70-80% of fuel is used in towing the fishing gear.
- Seining in both 'fly-dragging' and anchor modes require less power compared to trawling and subsequently these methods burn less fuel.
- In more specific fisheries, such as single species fisheries, there may be scope for investigating alternative methods. For example, the recent growth of squid in UK waters could be targeted by jigging. Lower twine diameters, in combination with alternative mesh technology, can introduce significant savings.
- Twin/multiple trawl rigs can have less drag than single rigs with comparable ground coverage and can be used for targeted ground fish and Nephrops fisheries.

2. Economic benchmarking

You can look at your vessel's performance compared to others and consider whether this fits your expectations, given what you know about how your vessel is run. Benchmarking is a way to compare the financial performance of a vessel to the 'best-in-class'. It compares operational processes, financial performance and other measures of the efficiency of a vessel's activities. Skippers can compare results against other vessels in the same segment or against their own vessel's previous performance. The benchmarking report helps establish which areas of the running of the vessel could improve overall financial performance. It does not tell owners what to do to make improvements, but it shows them in which areas to apply their efforts. For more information please visit

www.seafish.org/research-economics/industry-economics/economic-services

3. Vessel optimisation and propulsion

Propulsion systems should be checked – most vessels' propellers are only 30% efficient. Fitting a nozzle can result in dramatic improvements. Another significant factor affecting fuel efficiency is vessel design and the correct matching of the propulsion system (engine/gearbox/ propeller) for the task in hand. The ratio of a vessel's length to beam can have an effect on fuel efficiency – ratios of 3:1 and 4:1 can be beneficial. Using the correct engine for the vessel is imperative. Assess the gearbox. As well as heat loss, friction increases running costs.

6 / THE ENVIRONMENT



4. Vessel and hull maintenance

A dirty hull is like driving a car with the handbrake on. Poorly finished paintwork can have a similar effect. An often overlooked area of potential fuel savings is vessel and hull maintenance. For a little financial outlay the benefits can be worth it over time. Excess paint can add to vessel drag – a 20 metre white fish boat can carry up to five tonnes of paint. The correct type of antifouling paint is important – some antifouling paints contain solvents which actually feed marine growth. Consider using solvent free (ceramic type) paint. Redundant appendages outside the hull, such as old probes create drag and add to the fuel bill.

5. Operational husbandry and auxiliary engines

Fuel flow meters can help skippers save around 10% on your fuel bill. If you can't measure it, you can't save it. 'Good housekeeping' on board a vessel and a mindfulness of operational fuel saving practices, such as using a fuel flow meter, should not be underestimated. Steaming speed should be considered: engines are usually at their most efficient at 80% revs – burn 70% of fuel and achieve 90% of the speed compared to full throttle. Keeping a true course can save fuel – it may seem obvious but planning the shortest journey to take account of tide, weather and wind can make a difference. Keep the fish hold closed at all times. Good insulation is also important for saving fuel. Hydraulics should be switched off or declutched when not in use.

6. Engine maintenance and monitoring

Poor combustion chamber sealing can lead to high fuel consumption. Regular engine maintenance is crucial to reducing fuel consumption. Monitoring air intake is important and could save up to 20% on the fuel bill. A hard to open door/hatch indicates a vacuum in the engine room. Return fuel lines should be checked. In some engines, 90% of the fuel delivered by the pump is returned to the tank via the return fuel line. Fuel injectors should also be monitored. Spray pattern is critical for engine efficiency, fuel economy and exhaust emissions.

Exhaust smoke should be checked. Black exhaust smoke could mean an overloaded engine, shortage of air or faulty injectors. White exhaust smoke could mean injectors or valve timing is out, or that leaking valves, damaged or worn piston rings are causing low compression. Blue exhaust smoke could signal burning lube oil, due to worn valve guides or a worn or broken piston.

7. Fuel and lubrication

If you have bacterial growth in your fuel this can lead to blocked fuel lines and poorly performing injectors. A biocide can remove any bacteria and clean up your tank and lines. There are many fuel options available to skippers, including emerging fuel types, fuel additives and fuel mixes – many promise great savings but detailed and independent information can be hard to come by. Seafish can advise on the pros and cons of what is available on the market, as each vessel will have individual needs and requirements. Bio-diesel is generally a more expensive fuel made from plant oil that will run in diesel engines with no modification. In some cases it may be possible to make your own fuel using recycled oil to make a saving.

Change your oil at the recommended intervals. Water removal products are available for vessels that receive poor quality fuel containing water, or have contaminated fuel. These products remove the water and prevent damage to the engine – improving efficiency. Be aware of the increased safety risk if using LPG. Using LPG can save up to 20% on a fuel bill but not many low HP engines are available.

6 / THE ENVIRONMENT



8. New vessel design and new builds

Hydrodynamic bow designs reduce the resistance through the water. Approximately 90% of the UK fishing vessels today are less than 15m in length and are built to fit neatly within licensing requirements, build standards and regulations. This has resulted in size disparity of vessel to fishing method. Modern design trends of high beam to length ratios, bluff bows and wide and deep mid body sections have led to inefficient hydrodynamics. As a consequence fuel efficiency suffers. Ideas for design that could increase efficiency include:

- Using a fixed nozzle in your propulsion system – up to 22% fuel saving is possible with 7.5% increased thrust.
- Catamaran design – a 2:1 length beam ratio is possible without detriment to fuel efficiency dependent on hull form (when compared to mono-hulls).

6.5 Recovery of lost fishing gear

Lost fishing gear can be expensive for fishermen. It can also have a high environmental cost on marine life by entangling and injuring or killing marine mammals, seabirds, turtles and other marine life. Lost gear can be a result of a variety of reasons including breakages, bad weather conditions, unexpected underwater obstructions, poor seamanship, and the accidental removal of marker buoys. Abandoning fishing gear at sea is irresponsible if it is practically recoverable. This practice breaches the International Convention for the Prevention of Pollution from Ships (MARPOL) and within the UK the Marine Management Organisation regulations. For further information on UK requirements please visit

www.gov.uk/guidance/markings-of-fishing-gear-retrieval-and-notification-of-lost-gear

RFS vessels must have measures in place to avoid losing gear and to recover it where practicable and safe to do so. Recovered gear must then be taken ashore in line with the Waste and Pollution Management plan. RFS vessels must have a procedure on how to recover lost fishing gear that commits to:

- Have onboard access to appropriate equipment to assist in the recovery of lost fishing gear.
- Record the last known position of lost gear and inform the relevant authorities where appropriate.
- Attempt the recovery and salvage of lost fishing gear from other vessel operators and to recycle damaged or found fishing gear, where appropriate and is practically possible.

For suggestions on some gear retrieval methods please refer to the FAO guidelines contained within Section 6.7.4 of this guide.

Ghost gear refers to any fishing equipment or fishing-related litter that has been abandoned, lost or otherwise discarded; it is also referred to as 'derelict fishing gear' and/or 'fishing litter'. The Global Ghost Gear Initiative (GGGI) is an alliance of governments, industry and NGOs working to eradicate ghost-fishing gear in our seas. It is strongly recommended that all vessel applicants within the RFS programme should sign up and stay informed at www.ghostgear.org

6 / THE ENVIRONMENT



6.6 Scientific engagement

Engagement between the fishing industry and scientists is essential if we want to move towards and maintain sustainable fisheries. Scientists require data to be able to inform decision making, The International Council for the Exploration of the Sea (ICES) is a scientific organisation, the purpose of which is to develop the science and provide the best available scientific advice for decision-makers to make informed choices on the sustainable management of our seas. Amongst other clients, they provide advice to the European Commission in relation to the Common Fisheries Policy, the Marine Strategy Framework Directive, and the Habitats Directive.

As active and responsible members of the fishing community, you are in a position to participate in data collection programmes which will, in turn, improve the quality of the scientific advice to decision makers. For example, at the EU level, ICES produces catch and landing advice, which the Commission uses as the basis for their proposals for Total Allowable Catches (TACs). This then goes to the Council of Ministers to make a final decision. The final decision then becomes the annual quota for Member States to allocate. For data deficient stocks, ICES take a precautionary approach to account for the uncertainty of the stock size and status. They use a 20% reduction on their estimation – so if they estimate a stock to be sustainably harvested at 100t, their catch advice would be set at 80t. Therefore, the more data they collect, the more certainty they can have on their advice to decision makers and this reduces the need to use the precautionary approach. It is important that sufficient data are collected for all stocks, if the data set is not robust then ICES will advise catch levels that include this 20% reduction as a precautionary measure.

RFS applicants must commit to cooperating with scientists to collect and share data. The vessel's Environmental Policy must include commitments to at least:

- Participating in fishery data collection programmes by agencies or government research bodies relevant to the fishery, or non-target fish species, when requested and it is safe to do so. Two examples of this in the UK are the Fisheries Data Archive Centre (FishDAC) by the Centre for Environment, Fisheries and Aquaculture Science (Cefas); and Defra and cefas' ASSIST project (Applied Science to Support the Industry in delivering an end to discards).
- Cooperating with and participating in observer programmes by agencies or government research bodies, where it is possible and safe to do so.
- Recording and documenting the details of all types of unplanned fishing gear interactions with endangered, threatened or protected species and other non-target species, including the nature and outcome of the interactions.
- Taking appropriate steps at all times to minimise harm to, and accidental capture of any threatened, endangered or protected species, or other non-target species.

6 / THE ENVIRONMENT



6.7 Supporting information

6.7.1 Fisheries gear type by catch mitigation measures implemented in fisheries

Fishery		Tuna fisheries/small pelagics (Gilman, 2011)
Gear		Type purse seines
ETP Endangered, Threatened or Protected Species		Cetaceans/turtles
Preventative Measure		Restrict setting of FADs or other aggregating devices. Prohibition of night sets. Conducting backdown after the dolphins are captured. Use of the 'medina dolphin safety panel'. Not setting on turtles. Deploying boats to assist with the release of turtles. Turtle excluder devices.
Fishery		Toothfish/deepwater species (SCCCAMLR, 2006)
Gear		Demersal longlines
ETP Endangered, Threatened or Protected Species		Seabirds/sharks/skates/rays
Preventative Measure		Night setting. Under-water setting of hooks. Ban on discharging of offal off the side of boats. Bird scaring devices on the deck e.g. tori poles. Move on rule.
Fishery		Large pelagic fisheries (Gilman,2011)
Gear		Pelagic long lines
ETP Endangered, Threatened or Protected Species		Seabirds/turtles
Preventative Measure		Night setting. Under-water setting of hooks. Ban on discharging of offal off the side of boats. Bird scaring devices on the deck e.g. tori poles. Wider hooks with large fish bait. Deeper setting to deploy hooks.
Fishery		Shrimp fisheries (Kennedy, 2007)
Gear		Pelagic trawls
ETP Endangered, Threatened or Protected Species		Turtles
Preventative Measure		Avoiding hotspots. Not using FADs or other aggregating devices. Turtle excluder devices.
Fishery		Small pelagics (Hall, 2000)
Gear		
ETP Endangered, Threatened or Protected Species		Gillnets/cetaceans
Preventative Measure		Pingers. Weak lines on buoys to break away before entanglement.

6 / THE ENVIRONMENT



6.7.2 FAO Factsheet: retrieval of lost gear

Recovery methods

Knowing the exact location of lost gear greatly enhances chances of recovery. Close to shore this can be achieved by using landmarks; artisanal fishers are skilled in this method. Further offshore, defining the exact position of the fishing gear could be a problem, though the recent emergence of inexpensive GPS systems means that in most cases the position can be known – and recorded.

The typical recovery method consists of dragging an implement (a 'creeper') designed to snag the gear along the sea bottom until the gear is found. With light gear, such as traps and lines, the effect of tide and/or wind on the vessel is sufficient to generate a dragging motion. Where there is little or no wind or tide, the vessel must use power to drag the creeper slowly along the sea bottom. Too much tension on the creeper wire should be avoided as the lost line or trap attachments could break. In this respect, when there are very strong tides, the vessel must tow the creeper slowly against the current.

With heavy gear, the creeper operation can be much more active; the vessel's power can be used to a greater extent and a far higher tension can be kept on the creeper wire. In such cases a weight must be connected to the wire some distance ahead of the creeper to ensure that good ground contact is made and that the creeper moves horizontally. Monitoring the tension in the wire carries out the creeping operation. Successful contact with the gear is indicated by an increased tension. Recently, growing concerns over the accumulation of lost fishing gear has led governments to embark on clean-up operations using specially-developed creeping gear.

Another method of retrieving fishing gear or any other item lost on the seabed is to use a different type of fishing gear (generally trawls). Although this may not be as effective as creepers, the cost of lost fishing is, to a certain extent, avoided. However, the vessel must fish in the same area as that in which the gear was lost. Attachment of the creeper to the toes of the net increases the chances of snagging lost gear.

Clean-up programmes

If the problem requires remedial action, a clean-up operation can be introduced. For example, such programmes have already been initiated by the Canadian and Norwegian authorities using special equipment. One simple method used on relatively clean ground is to sweep the area with a trawl net. Even if recovery is not complete, the damage done to set nets and/or traps would be sufficient to ensure that ghost fishing does not continue. This system should not be used on or close to reefs or in very shallow water. In the latter case it could cause danger to the vessel and its crew.

Ghost nets in deep waters

According to reports, ghost fishing is particularly problematic in deep water. In deep waters there are fewer currents to distort and reduce the effective fishing area of the net, no sunlight to degrade the materials, little growth of algae on the net and no other form of fishing (e.g. trawling or Danish seining) to accidentally recover the gear. This means that lost or abandoned fishing gear gradually accumulates until the problem becomes very acute. A set net lost at a depth of 200 metres on the continental slope can ghost fish for years after its loss (unseen and unreported). This probably causes far more environmental damage than a driftnet washed up on a beach in North America or Europe, which can then be identified and dealt with.

For more suggestions refer to www.fao.org/fishery/topic/14833/en

3 / GLOSSARY



ABC

Ambient	The temperature of the surrounding environment.
Bacteria	A group of single-cell living organisms. Some may spoil food and some may actually cause illness.
Clean seawater	Natural, artificial or purified seawater or brackish water that does not contain micro-organisms, harmful substances or marine plankton in quantities capable of directly or indirectly affecting the health quality of food.
Clean water	Means clean seawater and fresh water of a similar quality.
Cleaning	The removal of food residues, dirt, grease and other undesirable debris.
Cleaning schedule	Written document setting out how a boat is to be kept clean. It will detail each area and piece of equipment to be cleaned; the cleaning product to be used; person/s with responsibility for carrying out cleaning; standard of cleanliness required; frequency; and Health and Safety precautions to be taken. All persons concerned must be aware of their individual responsibilities. A supervisor is responsible for checking the total cleaning process.
Cold store or freezer	Equipment for keeping food at frozen temperatures. Usually set around -18°C.
Compliance	Actions that satisfy the legal requirements.
Contact surface	Any surface which comes, or may come, into contact with fish, either directly or in such close proximity that it could contaminate the food if dirty. Includes work surfaces, containers and equipment.
Contamination	The introduction or occurrence in food of any microbial pathogens, chemicals, foreign material, spoilage agents, taints, unwanted or diseased matter, which may compromise its safety or wholesomeness.
Core temperature	The temperature at the centre of a mass or piece of food.
Disinfection	Reduction in levels of contamination on food equipment or in food premises, normally by the use of chemicals to kill micro-organisms. Disinfectants used must be suitable for use in food premises.
Hygiene	Measures to ensure the safety and wholesomeness of food.
Infestation	Entry and survival of pest animals and insects on board the boat or within equipment or products.
Packaging	Means the placing of one or more wrapped foodstuffs in a second container, and the latter container itself.
Personal cleanliness	Measures taken by food handlers to protect food from contamination.
Pest	Animal life unwelcome in food premises, especially insects, birds, rats, mice and other rodents capable of contaminating food directly or indirectly.
Potable water	Means water meeting the minimum requirements laid down in Council Directive 98/83/EC of 3 November 1998 on the quality of water intended for human consumption.
Primary products	Products of primary production including products of the soil, of stock farming, of hunting and fishing. (EU Definition as 852/2004).

3 / GLOSSARY



ABC

Processed products	Foodstuffs resulting from the processing of unprocessed products. These products may contain ingredients that are necessary for their manufacture or to give them specific characteristics.
Protective clothing	Clothing – hats, boots, waterproofs – worn by the crew when handling fish to prevent contamination of fish by the individual.
Refrigerated hold	Area of the boat fitted with equipment to keep product cold. Normally between 0°C and 2°C.
Spoilage	Fish deterioration resulting in off flavours, odours and possibly appearance indicating products are unsuitable for sale or to eat.
Taint	Contamination of food with undesirable flavours or odours.
Unprocessed products	Foodstuffs that have not undergone processing, and includes products that have been divided, parted, severed, sliced, boned, minced, skinned, ground, cut, cleaned, trimmed, husked, milled, chilled, frozen, deep frozen or thawed.

**Did you find the information in this guide useful?
Is there anything we could have done better?**

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