Segment Eight - HACCP

HACCP

In everyday speech, we occasionally hear the term HACCP (Hazard Analysis Critical Control Point), more so if we work in food handling.

Often you will hear someone talk about the HACCP Plan and you may be confused about what this is and even perhaps how to pronounce HACCP (*say Hassup*, don't spell out each letter as any in depth conversation about HACCP will take far too long*).*

We are going to spend some time telling you about the words and terms used in HACCP, and will even take you through the process steps involved in developing a HACCP Plan, but not in enough detail that you can do it yourself, for that you would need to take a dedicated HACCP course for a more detailed understanding)

This segment aims to give you an understanding of HACCP sufficient for you to work within your business's current HACCP Plan.

AIMS OF THIS SEGMENT

At the end of this segment you will be able to:

- Describe briefly what is meant by Hazard Analysis and HACCP;
- List some common hazards and appropriate controls;
- Give examples of prerequisites;
- List the seven principles of HACCP;
- Describe briefly the legal basis for HACCP;
- Identify the benefits of operating a HACCP system;
- Identify the role of the individual and team in operating a HACCP system.

HACCP - HAZARD ANALYSIS CRITICAL CONTROL POINT

So now we know what the acronym HACCP means in full.

The origins of HACCP

HACCP is a food safety system developed in the 1960s that seeks to identify and control all food safety risks before they have an opportunity to cause a problem.

HACCP actually is rocket science as it was developed in the US for NASA by the Pillsbury Dough Corporation, who manufactured the foods used by astronauts at that time.

Since then this systematic approach to food safety has become the primary food safety control method adopted throughout the EU and much of the rest of the world.

But what is HACCP?

Most food, including seafood, goes through a number of process or handling steps between point of harvest and point of consumption. Some of those steps will have no significant impact on food safety, while others can potentially introduce food hazards or fail to control existing ones.

Some steps are important because they can provide an opportunity to remove or reduce the risk from potential food safety hazards.

This is an important point to understand. Steps that can cause problems by introducing food hazards are different to steps that can solve problems by removing hazards, and we will see how these two types of steps play their roles later in this segment.

So to have our first real attempt to answer the question, what is HACCP?

HACCP is:

- A logical and systematic basis for identifying and evaluating the potential risks to food safety of a process;
    - This is the Hazard Analysis part of the title.

- A logical and systematic process of identifying when, where and how these potential risks will be eliminated or reduced to a safe level, to ensure the eventual safety of the food produced.

    - This is the Critical Control Point part of the title

These are two sides to the HACCP ‘coin’;

- work out what could go wrong and then;
- decide how to make sure it doesn’t cause a problem.

WHAT ARE THE BENEFITS OF HACCP?

There are many benefits to having a HACCP Plan in place and many reasons why seafood businesses should take HACCP seriously.

Two of the key reasons are:

- Customers are increasingly demanding that their suppliers have effective HACCP systems in place as guarantees of food product safety;

- The Law requires that food businesses have food safety systems based upon the principles of HACCP.

Regulation 852/2004 on the hygiene of foodstuffs, Article 5 states:

> *Food business operators shall put in place, implement and maintain a permanent procedure or procedures based on the HACCP principles.*

This doesn’t necessarily mean full blown HACCP plans for smaller businesses – see *Other HACCP-based systems* at the end of this chapter.

Other benefits that food businesses could reasonably expect to see from an effective HACCP system include:

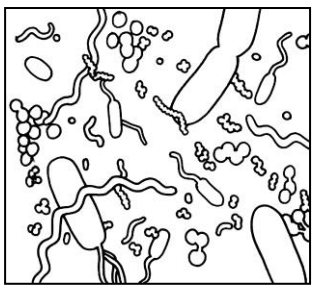
- Improved profitability through reductions in waste:
- HACCP enables a company to move to a quality system that looks at the 'big picture' from harvest to consumption;
- The HACCP Plan should identify where it is important to spend money and resources on food safety, and where it isn't necessary to make that investment;
- A working and effective HACCP Plan may help to protect a business from prosecution if something bad happens. If they can demonstrate *due diligence* and *duty of care* to the Judge;
- HACCP is a predictive approach to food safety. It requires the business to think about what might happen and to do something about it before it happens;
- And finally, HACCP works and it really does result in safer food, something our customers appreciate.

WHAT ARE HAZARDS?

In HACCP terms, hazards are usually biological, chemical or physical in nature. Hazards have the effect of *rendering or causing food to be unsafe for consumption.*

This is similar to, but not exactly the same as, the types of food contamination you may have discussed in a food safety training course.

Biological hazards in seafood are typically biological or viral contamination of the seafood product, including the production of any toxins or spores by the bacteria. Moulds and yeasts may also present a biological hazard.



They also include any biochemical changes that occur as part of the natural spoilage process of seafood if these changes result in seafood that is unsafe.

Yet another biological hazard are those biotoxins that may be produced by naturally occurring marine algae that make up the diet of some shellfish, and which can accumulate to unsafe levels in some seafood.

Chemical hazards are simpler and easier to understand. They are any form of chemical contamination that shouldn't be in the seafood that may make it unsafe to consume. Examples include:

- Cleaning chemicals;
- Insecticide, fungicide or pesticide residues in the product;
- Diesel contamination;
- Chemicals used in processing;
- Residues of medicines such as those used to treat farmed fish

Physical hazards are simply anything of a physical nature that shouldn't be there, such as wood splinters, metal fragments, bits of plastic, hair etc. They also include bones in a product that is supposed to be bone-free and shell splinters in processed crab meat for example.

WHAT IS HAZARD ANALYSIS?

Hazard Analysis is simply the collection of information to identify what potential hazards may exist, so that decisions can be made on which ones are significant and what controls are necessary to ensure food safety is maintained.

In practice this requires someone with a good understanding of what happens during every stage of the process to ask questions such as:

- Is there any possibility of a metal fragment getting into our fish fingers?
- Where might it come from?
- What can we do to make sure it doesn't happen?
- If it does happen, how can we spot it?
- If we spot it what should we do?
- Who is responsible for managing this?
- Whose job is it to do it?
- Have we a procedure in place already to control this?
- IS IT WORKING?

Metal contamination is one of the simplest hazards to control with metal detection after the product is packed and before it is dispatched. But even something as simple as this requires training, operation logs, testing, written procedures and several other things for it to work 100% of the time.

And of course, we should still try not to get metal into the product in the first place!

In fact, metal detection is often considered by food businesses to be so routine that it is not part of the HACCP process, but part of the foundation of good practices that companies should have in place before HACCP, that allow the HACCP Plan to concentrate on what is really important, trickier to control, and which may present a real risk if they are not controlled.

The discussion may go something like this.

Person A: *I think metal splinters in our food are a hazard that must be controlled by the HACCP Plan.*
Person B: *I don't think so. Our metal detection procedures are very effective and no metal fragment is likely to ever escape and end up in a pack that leaves the factory. The possibility is too remote to worry about.*

So who is right? Actually they are both right, it all depends upon the level of risk you think applies.

If metal splinters are a likely hazard then they may rate their own section in the HACCP Plan. If they are an unlikely occurrence and there are procedures in place to control them, then they can be considered as part of a foundation of good manufacturing practice.

Good Manufacturing Practice or permanent management procedures are those important procedures that help to create a clean and safe environment for the production and handling of food.

These good practices make up the foundation on which HACCP can be built. They are called the **Prerequisite Programmes** because they are required before you start to put in place any controls. Indeed, appropriate prerequisite programmes and effective procedures can mean a hazard does not require a further control as it is dealt with by the prerequisite.

Prerequisite programmes are wide and varied.

While the list isn't endless, it can be very extensive, and is likely to include these procedures and policies:

- Supplier approval procedures;
- Staff training and supervision policies;
- Cleaning and disinfection procedures;

- Building and equipment maintenance policies;
- A whole raft of food hygiene policies from hand washing through to equipment cleaning checks;
- Pest control management arrangements;
- Raw material intake, stock rotation, labelling, traceability and recall procedures;
- Equipment and product flow layout;
- Temperature maintenance, logs, procedures;
- Etc.

DUE DILIGENCE AND THE DUTY OF CARE

Simply put, food business operators have to demonstrate that they have taken '*all reasonable precautions*' to ensure food safety.

The word reasonable is very important in considering hazards, risks, and the overall HACCP Plan. It provides for a degree of flexibility in how a food business is run such as:

- The frequency of monitoring – whether it is temperature monitoring of the chiller, how often the metal detector is tested, how many samples are sent away for toxin testing, the business has the freedom to decide how often this is done. But the business must be prepared to justify its decision.

- Level of record keeping – how records are kept is up to the management to decide. But again, you must be prepared to justify the decision.

- Acceptable Risk – what level of risk do you think is acceptable? Each hazard that is controlled may require an investment of money and resources. There are costs involved if unsafe product leaves the business. What is an acceptable risk and at what point do additional controls become too costly for the business to justify?

The advantage of this flexible approach is that it allows individual businesses and whole industries to determine what is appropriate. The disadvantage is that, should you get it wrong, you cannot blame anyone else and you have to accept responsibility for your actions.

Areas in which you are able to offset this liability are where there exists an accepted industry good practice guideline, or even a statutory limit that you have complied with.

For example, there is a statutory limit on the level of ASP toxin that can be present in King Scallops that are sold for consumption. There is industry guidance available on how scallops should be handled and shucked to minimise the risks from this toxin, should it be present.

This limit and these guidelines go a long way to helping a scallop shucking business decide on how to reduce the risk from ASP toxin to an acceptable minimum.

HOW DO WE SET UP A HACCP PLAN?

The very first thing you need to do is decide what kind of food business you are and what kind of HACCP plan you need to produce.

In the seafood industry there are two extremes of businesses. At one extreme we have the very large, sophisticated and complex seafood manufacturing businesses, while at the other we have smaller businesses such as seafood restaurants.

Let's look at how these two extremes compare.

Seafood Restaurants	Seafood Processors
Primary process is cooking and heat treatment.	Primary process is preservation of quality/safety.
Low volumes and very short production runs (often single dishes).	Long production runs, high volumes, consistency of materials and products.
Highly complex and variable, even within a "batch/menu"	Within a site or department, processes and products are less variable and much more consistent.
Flexible approach to 'processing' (cooking) to meet customer requirements.	Planned approach to process, raw materials, products. Customer requirements are integrated into production plan.
Significant risk/problems are staff related. Did they do what they were supposed to do?	Significant problems/risks tend to be engineering related. Are our processes/controls safe?
Adaptable, creative led approach to management of processes in real time.	Adaptable approaches are usually led by the 'science' and not by the 'art' of seafood production.
Highly variable approaches are dependent upon decisions of single individual or small groups;	Planned approach, managed by team of experts and variations are carefully thought through.
HACCP tends to be a generic approach that focuses on the management of the processes.	**HACCP tends to be product led with a plan for each product that focuses on the appropriate production chain.**

There are no hard and fast rules for which approach you should take, as long as the resulting HACCP Plan is fit for purpose.

How to conduct a HACCP study

Team Work is Best

Even if you are a small business, you should try and approach HACCP planning as a team.

What are the benefits of involving staff in this process?

- Managers and staff have varied process and product knowledge that can contribute to the Plan. Often they know what really happens when work gets busy;
- Supervisors and staff feel involved and valued if their contributions are listened too;
- Staff are more likely to adhere to company HACCP rules and food safety regulations if they understand their role in ensuring a safer business;
- Staff are more likely to fill in monitoring forms accurately and efficiently when they can see how important they are.

What makes the ideal team?

In one word, balance.

A balanced team has a range of appropriate expertise, with members selected who have experience, ability, knowledge, and commitment to the work of the team.

Team members, irrespective of their role outside the team, must be treated as full members and their views should be given due consideration. A team member who fails to engage with the other members, or who is ignored and isolated by the team is a wasted resource and a missed opportunity. The simple solution is to take them off the team, the better solution is to re-engage with them and bring them back to full participation.

HACCP Teams should meet formally; have adequate time allocated to development of the plan and discussions and meet as frequently as necessary. Their discussion, or at least why certain decisions were agreed to, must be recorded.

How big should the team be? **4 to 6** seems an ideal number for most circumstances, if you have enough suitable participants. This may not be practical if you are a small operation with only 1 or 2 employees.

Of course, team members need not always be employees, it is sometimes appropriate to bring in outside expertise.

As a HACCP Team member one of the first things for you to begin to understand are the **seven principles** of HACCP.

1 Carry out hazard analysis
2 Identify critical control points
3 Set critical limits
4 Establish a monitoring system
5 Establish corrective actions
6 Establish verification procedures
7 Document and record

Confused? Hopefully these longer explanations will help.

THE SEVEN PRINCIPLES OF HACCP

PRINCIPLE 1. Identify any hazards that must be prevented, eliminated or reduced to acceptable levels.

A Hazard Analysis should be carried out. You will need to develop a process flow diagram for this. The flow diagram will help you to identify any potential hazards to food safety.

There are a number of commonly agreed stages in doing this.

I. Define the terms of reference – what do you plan to analyse? Is it a product, a production line or a process such as sous vide cooking in your restaurant.

II. Assemble the HACCP Team – see above.

III. Define the product or process - e.g. Fried battered fish perhaps, or (frozen) cod in butter sauce, or even hot smoked mackerel.

IV. Define your target audience and intended use – general public, children, patients in a hospital etc.

V. Construct the flow diagram and collect data on each step.

There are no set rules on how the flow diagram should be presented, bar one. When you have drafted the flow diagram you must ‘walk the line’ to make sure what you have on paper is what really happens.

Other data will be needed to support the process flow diagram such as:

- List of raw materials, ingredients and any related food safety data you have;
- Sequence of process steps;
- Time and temperature history of raw materials, part processed and finished products;
- Floor plans and equipment layouts;
- Routes for personnel, ingredients, product, noting any cross over points or loops;
- Any other data that is dependent upon the type of process or product under review.

VI. Verification – check that what you have on paper is what happens in reality, so use your feet and eyes, take a temperature probe, ask questions and talk to people;

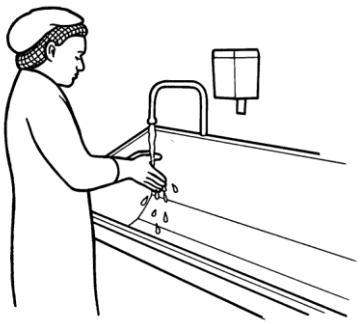
VII. List all the hazards, even the slightly marginal ones, along with any control measures there might be in place. You need to capture all possible hazards at this point. The less important hazards will be eliminated later so that you are left with just those that must be managed to ensure food safety;

Control Measures

Control measures are those activities and actions that can eliminate or reduce food hazards to a level that is acceptable.

There may be more than one hazard controlled by a particular measure, and the same hazard may occur at different stages in processing and may require more than one control measure.

Some control measures are generic and can be expected to control hazards throughout the business and be similar from business to business. Examples include:



- Pest control;
- Waste handling and management;
- Glass and hard plastics policies;
- Cleaning schedules;
- Personal hygiene;
    - Handwashing;
    - Clothing;
    - Hairnets etc.
- Staff training.

These types of controls are often referred to as prerequisite controls or programmes as they are part of the foundation of good practices that any safe food business must be built upon.

Other control measures may be designed to control very specific hazards. Some of these controls may also be prerequisites as well.

Many of these types of controls are aimed at controlling the **contamination**, the **multiplication** of bacteria (and moulds) or the **survival** of organisms, toxins or viruses at a *significant level* in the consumed product. Contaminants are usually classed as Physical, Chemical, Biological or allergens.

When is "*significant"*, something we need to worry about? This is a subjective decision, as no matter how many grading systems or formulae are used, the final result will vary from person to person, depending upon their experiences, role etc.

This is why a team approach is so important. The final decision must be based on a range of views, experiences etc. Even then the decision may need to change should new information, regulations or guidance become available, or something happen to cause an incident.

The most commonly used formulae for calculating significance is **likelihood x severity**. Other considerations such as the numbers that could be affected and any special risk groups (allergies, children, and older people) should also be weighed up.

LIKELIHOOD X SEVERITY

Likelihood is the possibility of a hazard occurring <u>if there were no controls in place</u>.

For instance it would be wrong to say that oysters from Class B waters are free of unsafe levels of bacteria as they are purified in depuration centres before going on sale.

The assessment made without these controls in place would conclude that these oysters are likely to be contaminated and the hazard is likely.

Severity of a hazard is the expected impact should it occur.

The severity of the result of those oysters being consumed uncooked is high with susceptible individuals made ill.

This combination of likely with severe outcome means that all oysters from Class B waters must either be purified at a licensed deputation centre or cooked before consumption. This is important enough for it to be a legal requirement. The combination of likelihood with severity is what turns a hazard into a risk. The oysters pose a significant risk, but that **risk is controlled** by an approved depuration (purification) process.

Likelihood could be - improbable - possible - occasional - regular.

Severity could be - trivial - minor - major - death.

Combining these responses into a grid gives us 16 possible combinations.

Filling in the risk matrix we can group the 16 combinations of likelihood and severity into risks that range from trivial through to intolerable, like this:

Likelihood				
Regular	Substantial	Intolerable	Don't even think of going here	
Occasional	Moderate	Substantial	Intolerable	
Possible	Tolerable	Moderate	Substantial	Intolerable
Improbable	Trivial	Tolerable	Moderate	Substantial
	Trivial	**Minor**	**Major**	**Death**
		Severity		

The trivial risks can be left out of the process of HACCP as they pose no real risk to public or consumer health. Tolerable risks can be dealt with later as it is the moderate, substantial and intolerable risks that must be dealt with first.

If your rating is even higher than this then you must question carrying out that process at all, as any failure in controls may result in an outcome that cannot be accepted.

Now that you have your Hazards identified and prioritised in some form of risk level it is time to move on.

PRINCIPLE 2. Identify the critical control points.

This is the CCP of HACCP. So what is It?
Let us break it down,

Point – a single step or point in the process of taking raw materials and ingredients and turning them into the finished product. It could be the point at which battered fish is fried, frozen prawns are packed and bagged, scallops are washed or mackerel for smoking are filleted.

Control – The action at this point has to have an impact on the hazard you are considering, and that impact has to reduce or remove the likelihood or severity of the hazard. A good example is the temperature of peas in a Bain Marie – is it high enough to stop bacterial multiplication?

Critical – The action at this Control Point needs to be critical.

Critical control points are the last point in the process at which the hazard can be eliminated or reduced to a safe level

A good example of this is scallop shucking. When shucking it is important to remove the entire frill etc. from the edible meat. It is not critical, because there should be a careful inspection of each scallop after washing and any with frill left on should be trimmed. It is at this later inspection/trimming stage that frill removal is critical.

To be sure that what you have is a Critical Control Point there are two tests. The test used in more complex seafood businesses involves a Decision Tree. The Decision Tree is too complicated for our purposes here, so instead we'll use these two simple questions.

Q1. If at this point the Control Action wasn't carried out, would the hazard realistically lead a risk to food safety?
No = it is not a CCP, Yes = try Q2

Q2. Is there a later step in your process where the hazard is eliminated or reduced to a safe level?

No = It is a CCP as this is the last chance for you to control that hazard.
Yes = the later step is more likely to be the CCP.

PRINCIPLE 3. Establish critical limits at critical control points.

Sounds simple doesn't it, and providing you have the right information it can be.

There are three terms to understand when considering Critical Limits.

Target Level – This is the normal and acceptable level at which that particular process step is supposed to work. For example the target level for chilling cooked whole crab may be to reduce the crab's core temperature to below 5°C within 80 mins of removal from the boiler.

Critical Limit – This is the limit or value that must not be exceeded for any reason, as beyond that limit the process or product may be unsafe. Critical really does mean critical.

Using our crab example the critical limit may be 120 mins to chill the crabs to below 5°C.

Action Level – This is the level at which some corrective action should be taken. We may have decided to set this level at 90 mins for the cooked crab.

What does this mean in reality?

The cooked crabs are removed from the boiler and enter the chilling tunnel where they will spend the next 80 mins. When the basket comes out they are temperature checked and usually they are below 5°C.

A batch of larger than average crabs come out of the tunnel and they are still above the target temperature so they are placed in the blast chiller and temperature checked after 10 mins.

If the crab core temperature has dropped to below 5°C within the Action Level time of 90 mins then no action need be taken.

If they are still above 5°C then they remain in the chiller until they are below the target temperature. Appropriate actions must be taken.

- The immediate corrective action to 'correct the process' would be to reduce the temperature in the chiller tunnel.

- The next action is to separate the 'suspect batch' so that it can be monitored. This may include sending a sample for microbial analysis. If the critical limit of 120 mins has been exceeded something more drastic may be required.

- The longer term action to prevent a reoccurrence may be to review the tunnel operating procedures so that batches of larger crabs can be handled appropriately.

PRINCIPLE 4. Establish and implement effective monitoring procedures at critical control points. There are three main aims of this monitoring process.

- To measure on a regular and planned basis, the things that will tell you the process is under control and your product/process is safe.

- To trigger a corrective action that:
  - Brings the process back under control – e.g. reducing the temperature in the chiller;
  - Identifies the batch that requires more monitoring – sending a sample for testing to see if it is still safe for example.

- Provides records and information so that you can:
  - Demonstrate the controls are working;
  - See trends that you can manage;
  - Use your data as proof that you have been acting responsibly

Your monitoring system should make clear who, what, when, how, where and why.

Who – will take the measurement, make the observation etc.?
What – is to be measured or examined?
When – will this measurement take place?
How – will this be measured?
Where – will the monitoring take place?
Why – is it important?

So for the crab chilling step:

- Who: The boiler team leader will take temperature measurements;
- What: The core temperature of the crab is observed/measured for every stack of trays when they leave the tunnel;
- What: The air temperature and fan speed of the chiller tunnel is continuously measured;
- When: Every stack of crab trays as it exits the chiller tunnel will be measured;
- How: Using a calibrated temperature probe, three crabs will be measured;
- Where: The largest crab on the top tray, bottom tray and middle tray are to be probed;
- Why: Rapid chilling is a critical part of the pasteurisation process and is essential to control bacterial multiplication in this high care product.

This CCP will also be supported by a number of pre-requisites and policies including staff training, recording forms, clear written procedures for calibrating the thermometer and taking temperature measurements etc.

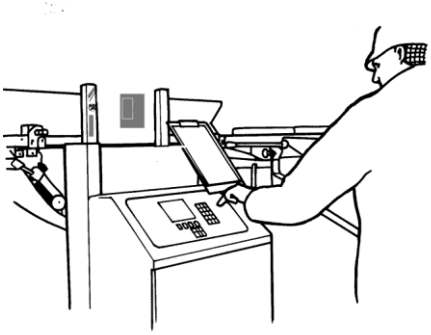
In addition to setting out how monitoring is carried out, it is important to establish at what levels action must be taken and what these corrective actions must be.

PRINCIPLE 5. Establish corrective actions when monitoring indicates that a critical control point is not under control.

We've already touched upon this. In the case of crab there is something to do when the action level is exceeded, and something else that must be done if the critical limit is breached.

Some corrective actions may be automatic and not even require human intervention.

The thermostat on a chiller, freezer, frying range or oven will be set at a target level. When an action level is reached it will react automatically to increase or decrease the heat and use more or less refrigerant, so that the process operates as close to the target level as possible.



Some of these devices even have critical limits built in such as an alarm on a freezer or chiller when the temperature goes too high or power fails. Some will even provide you with a continuous record of temperatures, but at the end of the day (or shift or every hour) it's up to the designated human to check that the machines are working.

Other corrective actions needs a little more thought. For example:

- Extend cooking time until core temperature is reached for fried battered sausages?
- Quarantine the batch of scallops and hold until the results of testing are known?
- Reject it and bin it?

PRINCIPLE 6. Establish procedures to verify that the controls and HACCP Plan are working effectively.

Check that the HACCP Plan as it is written reflects what happens in the business – is it a plan based on real information?

Check after it has been in action for a while, that the HACCP Plan is still effective and if necessary change it to be more effective. Set a target date for the next review, after every completed review.

Check whenever there is a significant change in the process or product that the HACCP Plan still applies.

Check the HACCP Plan in the light of any new scientific data, industry guidance or government regulation to verify that it is still an effective means of controlling identified hazards.

And finally, check the HACCP Plan whenever there is an **incident** that suggests things have gone wrong.

Verification checks may be carried out by you and your staff, by customers during their audit visits, by independent auditors or by the regulators. These are commonly referred to as:

First Party Verification – You, staff in your business, third parties contracted by you for this purpose;

Second Party Verification – The people you supply;

Third Party Verification – BRC and SALSA auditors are good examples, as is your local Food Inspection Officer (EHO);

Only First Party verification checks (those you carry out) will count towards <u>your</u> verification procedures.

PRINCIPLE 7. Establish documents and records

The volume, type and nature of the recording system will vary depending whether you are a corner fish and chip shop, national chain of seafood restaurants, the main seafood supplier to Marks and Spencer, or indeed the company that supplies crab paste in a tube to NASA for astronauts' to eat in orbit.

Whoever you are, and whatever the nature of your business there are two common rules:

1. All monitoring documents must be initialed and dated by the person collecting the data, and usually will be countersigned by their supervisor/manager;

2. Records and completed documents should be kept secure, usually for at least a year.

OTHER HACCP-RELATED SYSTEMS

HACCP as has been described here isn't ideal for every type of seafood business. Some businesses cannot bring together the multi-member HACCP Team, and some businesses just don't have clearly defined critical control points.

Fortunately, this has been recognised and guidance on the Law makes it clear that a full blown HACCP system is usually not suitable for smaller food retail and catering businesses.

There are three Food Standards Agency accepted systems for small caterers and retailers which can be used by general food businesses.

For England and Wales there is *Safer Food Better Business* (SFBB), a two part system made up of safe working methods (Part A) and monitoring and verification methods (Part B).

SFBB is used effectively in fish and chip shops, although there is some doubt as to the suitability of the retail version (*SFBB for Retailers*) for specialist retailers like fishmongers, without additional seafood-specific support.

If you would like to use *SFBB for Retailers* in a fishmongers then you should discuss this with your local EHO first.

In Scotland there is *CookSafe*, for small caterers. *CookSafe* is a five part pack that introduces the basic concepts; provides templates and guidance on flowcharts; contains charts showing potential hazards and risks; covers standard operating procedures or 'house rules'; and finally a selection of templates and blank forms to use.

The pack can be adapted to suit the needs of individual businesses.

RetailSafe is the food retailers version of *CookSafe*.

Northern Ireland has *Safe Catering* which prepared hazard analyses for a range of catering scenario's, along with forms, model documents and useful information on allergens.

SUMMARY

Hazard Analysis Critical Control Point is an evidence based system for identifying potential hazards in food handling and the control methods that should be used to reduce or eliminate those hazards.

HACCP states who, what, where, how and why certain actions need to be taken, monitored and documented to ensure safer food is produced.

HACCP also provides a series of 'what-ifs' that can act as fail-safes to ensure any potentially unsafe food does not end up in the human food chain.

HACCP is a food safety management system. It is **not** a training system or a quality assurance system.

GLOSSARY OF TERMS USED IN HACCP

Acceptable Risk Level	The level of risk that is accepted by the industry or food business as reasonable given the potential to have an adverse effect on public health, and the potential costs of reducing the risk further.
Action Level	The level at which some action is required to bring a process back towards the target level - usually associated with CCPs. At the action level food safety has not yet been compromised.
Allergens	A variety of food or additives that can cause a severe allergic reaction and even death. The only effective control is to **keep all known allergens away** from the seafood.
Control Action/Measure	Actions or measures which when applied to a hazard eliminate it or reduce it to an acceptable level.
Corrective Action	The action to be taken when monitoring of a CCP suggests the action level is about to be exceeded.
Criteria / Parameter	The thing being measured and monitored. For example, temperature, time, colour, bacterial numbers, presence or absence of contaminants are parameters. The equivalent criteria are the parameters plus their target levels and critical limits.
Criteria	The thing being measured and monitored. For example temperature, time, colour, bacterial numbers, presence or absence of contaminants' etc.
Critical Control Point	A step or point in a process where an identified Hazard is eliminated or reduced to an acceptable level, and where no subsequent control point exists.
Critical Limit	Similar to the action level, but if critical limits are exceeded the end result is potential harm to any consumer.
Decision Tree	A method, using structured questions, of establishing if a control point is a critical control point. Applied to each step in a process chain. A VERY useful tool for the HACCP team – readily available online.
Flow Diagram	A visual representation of the flow of materials and ingredients in the processing and handling of food products. Used in HACCP to identify all those steps that need to be tested as CCPs.
HACCP Plan	The documents that describe the processes, pre-requisites, hazards, risks, controls, actions, verification and recording procedures that make up a food business HACCP based food safety system.

HACCP Team	Those individuals brought together to develop and/or review a HACCP plan for a food business, product, department etc. The scope of their work is usually described as the HACCP Study.
Hazard	A hazard is something that has the potential to cause harm. Typically food hazards are allergens, microbial, fungal, viral, physical or chemical contaminants.
Monitoring	Planned measurements of those parameters that, along with target level, action level and critical limit, define a CCP. Records of monitoring provide valuable data on trends, near misses and the effective functioning of the CCP.
Parameter	Same as Criteria
Pre-Requisites	Policies and procedures that are essential for the safe and hygiene handling and processing of food. Often considered as part of Good Manufacturing Practices and may be referred to as Standard Operating Procedures.
Process Step	Any discrete point in the processing or handling of food. Storage and distribution may also be included.
Risk	A Risk is the estimate of how likely that a hazard will cause harm and the impact it will have if it does. A realistic estimate of the 'size' of a Hazard. Risk = hazard likelihood x hazard impact on consumer safety.
Severity	The potential impact of a hazard on the consumer, a measure of the seriousness of a failure to control a hazard.
Target level	The ideal level at which a process operates to ensure food safety is assured
Verification	The process of ensuring that the HACCP plan works – is it accurate, realistic and is it being used appropriately?