National Water Safety Management Programme

Level 1: Water Safety Awareness Module

Self Study Unit

Safeguarding lives in, on and near water

This resource is the approved material for the RLSS UK's National Water Safety Management Programme and has been specifically designed to support your learning as you develop your water safety awareness competencies.

National Water Safety Management Programme

National Water Safety Management Programme

Level 1:
Water Safety Awareness Module

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Level 1:
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Self Study Unit

Introduction
Welcome to the RLSS UK National Water Safety Management Programme (NWSMP).

Level 1 Water Safety Awareness – Self Study Unit
This Self Study Unit introduces you to the key issues and knowledge base for the Level 1 Water Safety Awareness Module (the core module of NWSMP). The Level 1 Water Safety Awareness Module is made up of this Self Study Unit and a Guided Learning Unit, requiring a combined total of six hours of study and guided learning.

Please work through this Self Study Unit and complete the online assessment. Upon completion of the online assessment, you will be able to download and print a certificate to present to your tutor at the start of your Guided Learning Unit (you should already have a date and details for this – if not, please check with your course organiser). It is necessary to complete the Self Study Unit and online assessment to progress to the Guided Learning Unit. Please allow two hours to complete this Self Study Unit and the online assessment.

Level 1 Water Safety Awareness – Guided Learning Unit
The Guided Learning Unit will take a minimum of four hours and includes group work. We recommend you read through the online Guided Learning Unit before attending the Guided Learning session.

Progression
On completion of Level 1 Safety Awareness Module, you are entitled to move on to any of the Level 2 Environment Specific Modules (along with the optional Life Support Module) and then progress to Level 3 (which includes the In Water Rescue Module).

Learning Outcomes
The Level 1 Water Safety Awareness Module (comprising of a Self Study Unit and this Guided Learning Unit) is primarily knowledge based. However, basic principles of rescue will be discussed and candidates will practise land-based rescue techniques. By the end of the module candidates will be expected to:

- Identify a range of open water hazards
- Understand the effects of cold water immersion on the body
- Demonstrate a minimum level of water safety and personal safety awareness
- Show an understanding of legal requirements and duty of care applicable to group leaders
- Understand principles of water safety, group management and risk assessment
- Show an understanding of the principles of rescue and rescuer safety
- Understand how to manage a group safely around the water margins
- Understand key water safety issues
- Apply practical risk management skills and show confidence in applying appropriate controls
- Demonstrate competence in land-based ‘Emergency Response’ rescues

Where, why and how do people drown?

Let's start by clarifying our understanding of the nature of water hazards. Water presents many hazards, which can lead directly or indirectly to drowning.

This means that the drowning process doesn't always result in fatality. A tragic consequence of recovery from drowning can be permanent impaired brain function. Our challenge is to reconcile the many benefits of water based activity with a reasonable and realistic level of safety.

We need to find a balance between risk and benefit. We want to enjoy water but we must be absolutely clear about its potential for great harm and understand our responsibility to ourselves and any person in our charge.

Definition of Drowning

The International Life Saving Federation (ILS) defines drowning as:

'*The process of experiencing respiratory impairment from submersion/immersion in liquid*'

There are also three defined outcomes of drowning, these are:

- ***Death***
- ***Morbidity (injury)***
- ***No morbidity (no injury)***

Once the drowning process has begun, with the submersion/immersion of the casualty's airway, an intervention must be made to prevent the drowning resulting in death.

Personal survival, self-rescue and rescue are interventions that can interrupt the drowning process. However, it is important to note that even after the drowning process is successfully interrupted, the drowning may still result in short or long term injuries to the casualty.

Most of us have happy childhood memories of splashing around in paddling pools or playing with a bucket and spade at the seaside. Water can be great fun and can be therapeutic in many ways and we all know that water is absolutely essential to life.

Our challenge is to reconcile our natural fascination and association with water with due care and safety. So, for us to have an accurate and realistic understanding of water we need to examine our perceptions and understand that whilst we all want to encourage water-based activity for lots of good reasons – we also need to be absolutely clear about the true nature of the hazards presented.

Analysis of drowning incidents suggests that most people have a poor level of awareness of 'open water' safety issues. Anecdotal evidence suggests that generally people under-estimate the hazards presented by open-water. In a number of drownings, the casualty enters the water in attempt to save someone else in difficulty.
So, what do you think? Take a few moments to consider the below.

a.) Write some early memories about water-play

b.) How did you learn what you know about water?

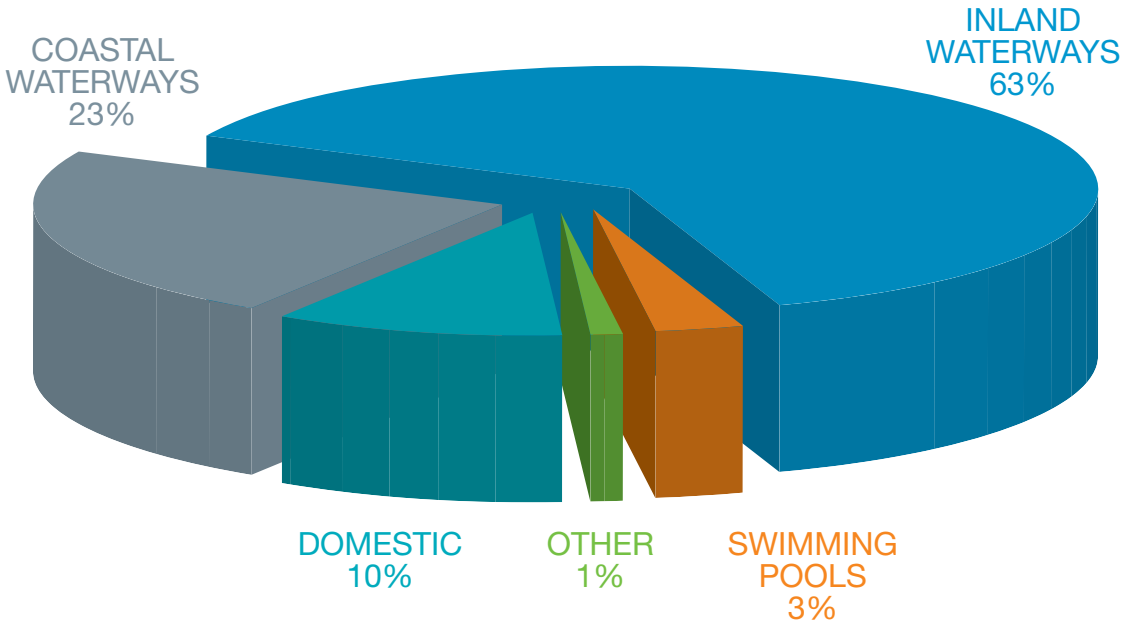
c.) What are the benefits of water-based activity?

d.) How would you rate 'most' people's perceptions of water as a hazard?

Drowning Statistics

UK Drownings by Location

On average there are between 450-600 drowning fatalities in the UK every year. Understanding where and how drownings occur can help to identify what the hazards and risks are, and what actions can be taken to reduce the number of people drowning each year. The figures below are generated from a three year average analysis.



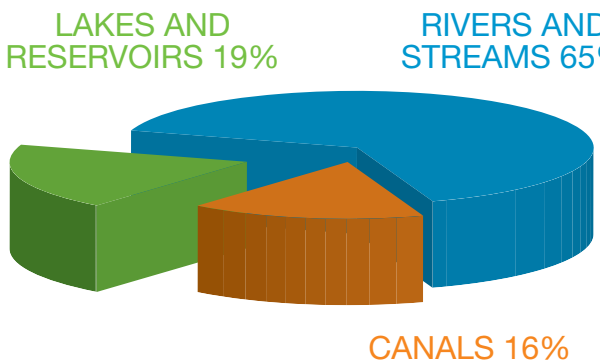
Open Water 86%

Open water sites are often easily accessible and popular places to visit for recreational activity. The high number of drownings can be largely attributed to the cold water temperatures, ease of access and lack of supervision or rescue services at most open water sites.

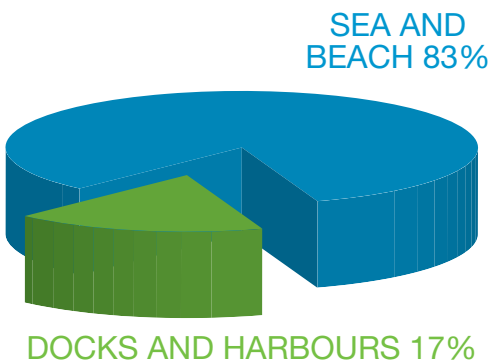
Inland (63%) The majority of open water drownings occur at inland water sites. Due to open access and proximity to urban areas, rivers and streams account for two thirds of these drownings.

Coastal (23%) Significantly fewer people drown in the sea than at inland water sites. This is due to restricted access to the coast for much of the UK population, and Lifeguard supervision at many UK beaches.

Inland Waterways



Coastal Waterways

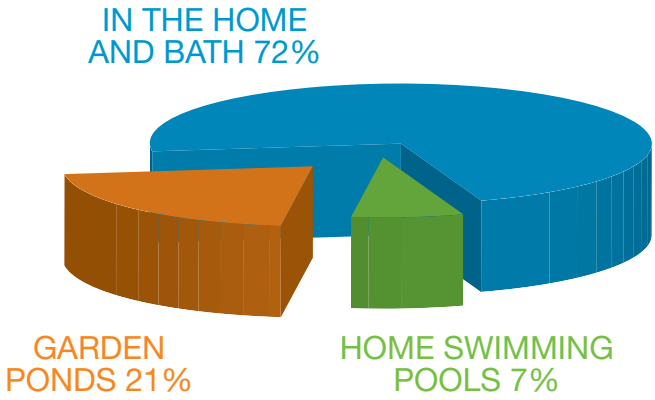


Drowning Statistics

Domestic (10%)

A significant number of drownings in the UK occur around the home. Most vulnerable around the home are young children and vulnerable adults (the elderly, and people with medical conditions).

Domestic



Swimming Pools (3%)

Despite more people swimming in pools than at any other type of water site, swimming pools have the fewest number of drowning of all water sites. This shows that swimming pools are the safest place to swim due to the well-managed water quality, water temperature and Lifeguard supervision.

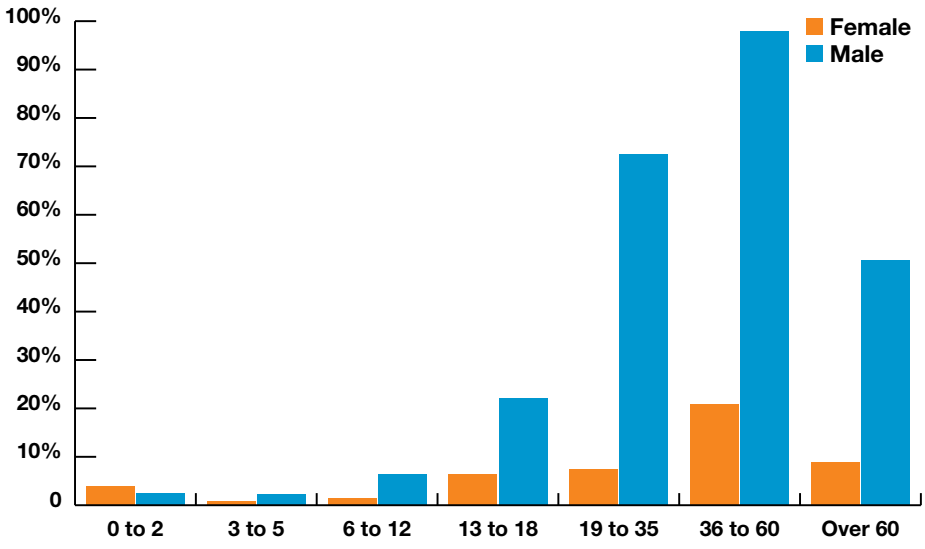
Other (1%)

These small numbers of drownings occur in ditches, marshland, drains, puddles, etc.

UK Drownings by Age and Gender

- Significantly more males (78%) drown than females (22%)
- Males experience a higher risk of drowning. Drownings increase significantly from the age of 15 years onwards

Drownings by Age and Gender (UK water related fatalities WAID)

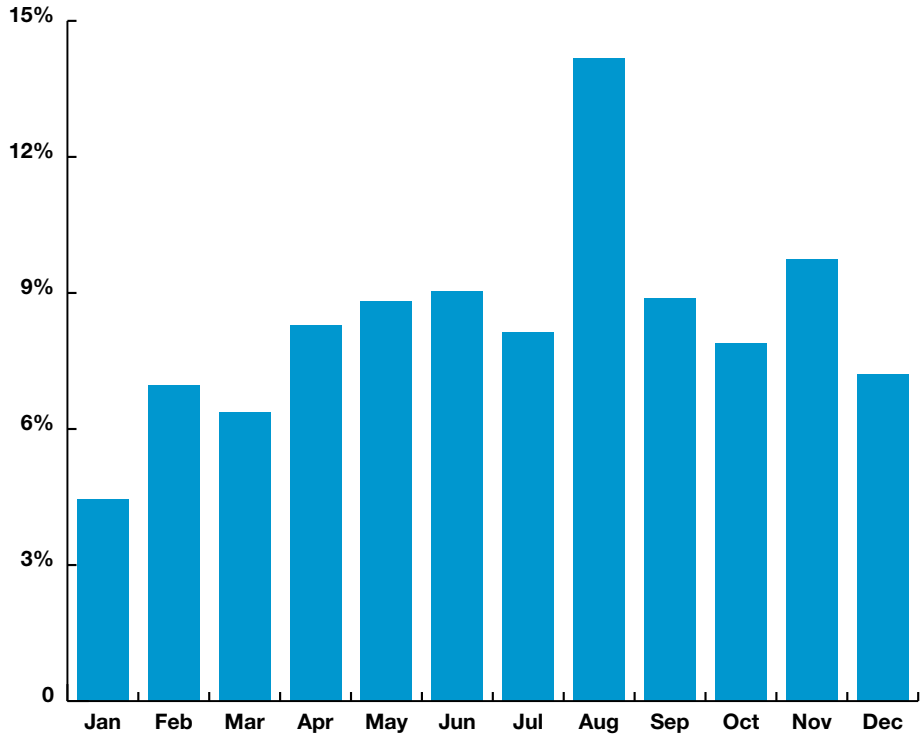


Drowning Statistics

UK Drownings by Time of Year

- More drownings occur in August than in any other month – this is due to increased numbers of people swimming during hot weather and summer holidays
- Drownings occur throughout the whole year – this demonstrates the importance of ongoing water safety education

UK Drownings by Tme of Year



Alcohol and drugs

- Alcohol is a factor in 18% of all drownings.

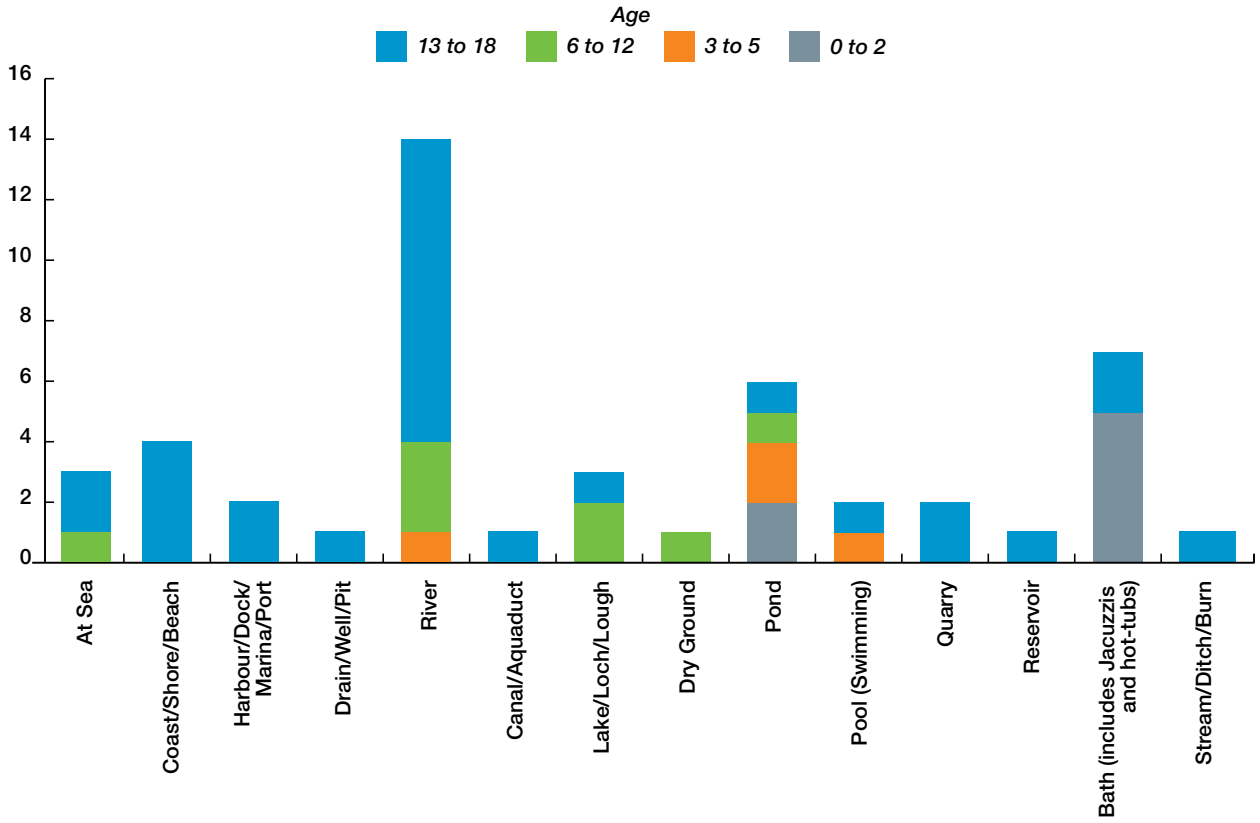
Due to differences in data collection techniques, comparable drowning statistics for Ireland cannot be produced. For the most up to date Irish drowning statistics, visit **www.iws.ie**

Drowning Statistics

UK Drownings by Activity

- The highest known factor contributing to drowning is simply falling into water – this highlights the importance of personal survival, self rescue skills and simple rescue techniques by a third party. Most drownings occur within five metres of the land.
- Where the activity is not known it is likely that the casualty was alone before entering the water – again this highlights the importance of personal survival.

UK Drownings by Activity



Causes of Drowning and the Drowning Prevention Model

The Drowning Prevention Model can be used to teach and explain the factors that can lead to a drowning event, and how drowning prevention strategies directly address these factors.

The outer red ring forms what is known as the Drowning Chain, which denotes the key factors that may lead to drowning. The Drowning Prevention Model identifies four causal factors that lead to drowning. The presence of any of these factors can lead to a drowning event. However, where two or more of these factors are in place the likelihood of a drowning event increases further.

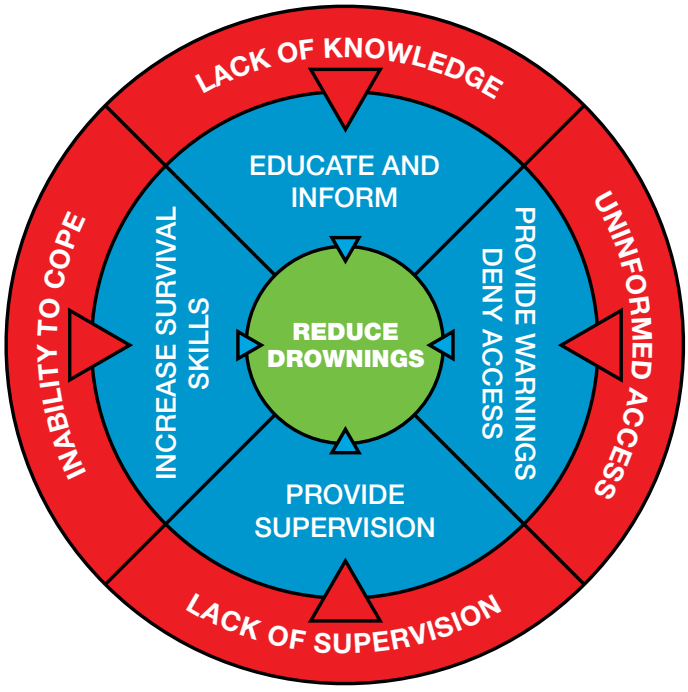
The causal factors that lead to a drowning event are:

1. **Uninformed, unprotected or unrestricted access.** *Access to water without safety advice*
2. **Lack of knowledge.** *Disregard or misjudgement of the hazard*
3. **Lack of supervision.** *Unsuitable or absent supervision*
4. **Inability to cope.** *Insufficient survival knowledge and capability*

A prevention strategy has to be formulated to break the drowning chain at each level. For each of the four causal factors of a drowning event, the strategy focuses on:

1. **Restrict access, improvement of infrastructure, provision of warnings**
2. **Educate and Inform**
3. **Provision supervision**
4. **Teaching survival skills**

Denial of access should be a last resort, unless clear severe hazards cannot be avoided, such as sluice gates.



Drowning Prevention Model
(Adapted from the ILS Drowning Prevention Chain)

RLSS UK Water Safety Messages

The Safe Code

The SAFE Code (also called the water safety code) is a simple way of remembering the most fundamental water safety tips.

SPOT — **Spot the Dangers**
- Learn about the hazards at swimming pools and open water sites.

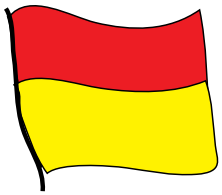
ADVICE — **Take safety advice**
- Read the signs.
- Listen to the Lifeguards.

FRIEND — **Always go with a friend**
- If one person gets into difficulty the other can get help.
- Never swim alone.

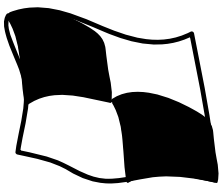
EMERGENCY — **Learn how to help in an emergency**
- Learn personal survival.
- Learn how to help others.

Beach Flags

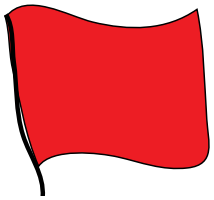
The beach flags are displayed by the Beach Lifeguards in patrolled areas to provide guidance on the water and wind conditions. The flags also inform beach users where the swimming and water sports zones are.



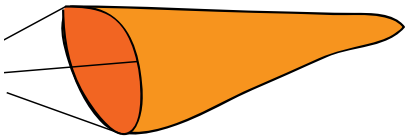
Red and Yellow Flag – Swimming zone
- Lifeguards patrol between these flags.
- It is the safest area for swimming.



Black and White Chequered Flag – Sports Zone
- Lifeguards patrol between these flags.
- It is the safest area for water sports.
- All other beach users should stay out of this area.



Red Flag – No Swimming
- The area between these flags is unsafe for people to enter the water.



Wind Sock – Offshore Winds
- Shows the direction and force of the wind.
- Offshore winds can be hazardous for swimmers and people using inflatables.

RLSS UK Water Safety Messages

Safety at Open Water Sites

More than 85% of fatal drownings occur at open water sites. Many of these drownings can be attributed to a lack of knowledge and understanding of the hazards at the open water sites, particularly cold water hazards.

Whenever you go to an open water site like a beach or lake, you will need to consider the hazards associated with the environment you are in as well as the activities you will be engaging in.

National Water Safety Management Programme

Water Bodies and Sites: The Features, Hazards and Risks

Introduction

By understanding the causes of hazards in the aquatic environment you will become able to predict many of the hazards that you will encounter at water sites. This knowledge will help you to control the level of risk that you take by either avoiding the hazards all together, or by putting procedures in place to minimise the risk.

This section introduces the most common water based hazards that you are likely to encounter at inland and coastal water sites.

Understanding Open Water Hazards

Deep and Cold Water

The waters around the UK remain relatively cold, even through the summer months, and particularly where the water is deep. Throughout the year the sea temperatures around the UK range from approximately 4ºC to 21ºC.

During the summer months, the waters around the UK can rise to comfortable temperatures, particularly at inland sites and in areas of shallow water. However, below the surface and away from the shore, the water remains cold. People swimming in water that feels warm in the shallows can suddenly find themselves in an area of very cold water and rapidly lose the ability to swim back to safety.

Tributaries flowing into inland water sites can also lower the water temperature around the inlet areas, especially where tributaries flow from hills or mountains.

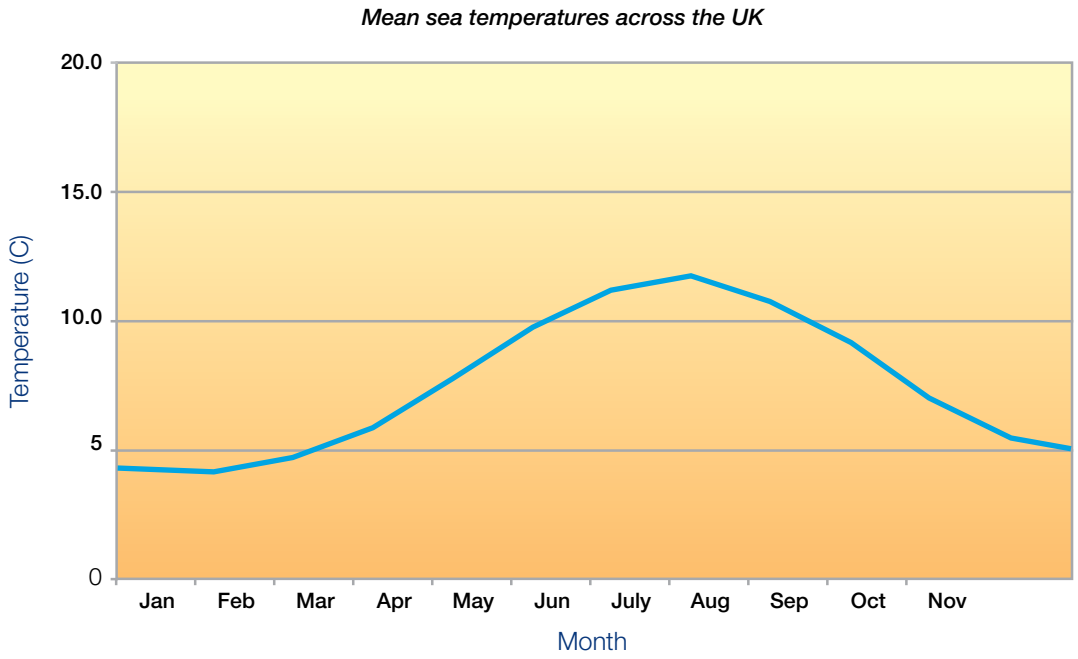
Effects of temperature and the differences between indoor and outdoor

People learn most of what they know about being in water in the confines of a warm swimming pool. Open water is a very different environment, which can present cold, deep and murky water in addition to submerged obstructions. It is quite difficult to communicate just how very different open-water is from indoor water.

Perhaps the most significant difference concerns temperature. Most Pool Lifeguards will tell you that regular customers complain when the temperature drops to 25 degrees. Consider then that for most of the year outdoor water will be less than half that temperature!

In order to be reasonably safe around water we must have a clear understanding of the effects of temperature and other open water hazards.

Understanding Open Water Hazards



Hazards and Risks

Cold water immersion may result in:

- Cold shock response
- Loss of performance, swim fatigue and swim failure
- Hypothermia

Understanding Open Water Hazards

Water Quality

Microbiological Hazards

Open water can contain a number of micro-organisms or pollutants that can cause infection and illness. Natural hazards include pathogenic micro-organisms (bacteria and viruses), parasites and toxic algal blooms such as blue green algae. One of the more common bacteria is Leptospira, which can lead to Weil's disease. Symptoms of the disease are normally similar to cold and flu symptoms including fever. In some cases the symptoms can worsen requiring hospital treatment. If any contact with water triggers flu like symptoms, gastro-intestinal discomfort, skin, ear, nose and throat infections it is worth checking it out with your doctor.

Illnesses caused by organisms in water vary in severity. Generally they result in minor gastro-intestinal symptoms or skin infections that last from 1-3 days but can include tightness of the chest and breathing difficulties. In some rare cases infections can be fatal. Away from human habitation and remote from sewage discharge, the risks of infection from water reduce.

Contact with contaminated water may result in:
- Weil's disease
- Eye, ear and skin infections
- Chemical poisoning
- Respiratory infections
- Septicaemia
- Diarrhoea, fever and vomiting

Pollution

Manmade pollution can also present hazards to water users, from discarded litter, broken glass and submerged shopping trolleys to agricultural and urban run-off containing harmful nitrates, phosphates and petrochemical compounds. All of these pollutants can seriously impact water quality and make it poisonous to fish, animals and humans.

Understanding Open Water Hazards

Visibility, Depth and Underwater Hazards

Clarity

The visibility of water is affected by a wide range of variables and will be determined to a large extent by the type of water and the surrounding area. Turbidity is the term used to describe suspended sediment or matter in the water column, which gives a dark, cloudy appearance. Estuarial waters tend to be turbid due to sediment content, a good example being the Severn Estuary. Poor visibility is not to be confused with contamination – the two are not intrinsically connected as sediment is not necessarily harmful. Clear water may have the appearance of good quality but may contain microorganisms or carcinogenic compounds that are not visible to the naked eye. If unsure of the water quality in the UK, seek advice from the Environment Agency or local authority environmental health department.

Depth of Water and Underwater Hazards

Poor visibility carries obvious hazards as the depth of water can be unclear and underwater hazards maybe concealed. Rivers often have natural hazards, such as rocks, and large obstacles fly tipped into them, including shopping trolleys and other scrap that can be extremely dangerous, especially if they are not visible. Obstacles present an obvious hazard of collision, for example people diving into a turbid river. When conducting an activity in murky water an assessment of the hazards must include water depth, underwater obstacles, access and egress. Obstacles can also act as strainers in swift flowing water with potential to entrap swimmers. Strainers and entrapments are dealt with in more detail in the River Module.

Depth of water presents an obvious problem for people who cannot swim. The majority of drownings occur within five metres of the bank or shore. Sharp changes in gradient usually result in people unexpectedly finding themselves out of their depth, being incapable of returning to safety. Steep shelving beaches or beaches that contain sand bars and troughs are particularly hazardous to non or weak swimmers as is falling or jumping into deep water from the river bank.

Manmade structures, such as piers and groynes, can present numerous hazards including entrapment and collision. Large structures can also affect the water movement, for example, rip currents tend to find a path of least resistance alongside groynes and piers. Of particular danger are structures that can become submerged during tidal movement, becoming invisible to unsuspecting swimmers. Young people are often more at risk due to a combination of factors includes over exuberance, ignorance of the dangers, submission to peer pressure and overestimation of their ability.

Understanding Open Water Hazards

Waterbed Composition

Waterbeds are the floor or bottom of a body of water that is usually covered by water. The different materials and compositions of waterbeds present a range of hazards:

Some waterways, particularly tidal rivers and estuaries, have a soft sediment layer of clay, silt or mud covering the surface of the waterbed.

Silt is a soft often muddy sediment that covers the surface of the water bed. Silt and mudflats most commonly feature in tidal rivers and estuaries, but can also be present at other water sites.

Hazards and Risks

- **Slip, trip and fall hazard** – pebbles and rocks
- **Entrapment hazards** – in sediment and under rocks
- **Entanglement hazard** – in plant life and other debris
- **Drowning hazard** – People trapped in the sediment are at risk of drowning from the main body of water (normally during the flooding tide).
- **Debris** – Rusted metal and other sharp debris can be concealed by the sediment.

Beaches have a wide range of sediment sizes, from soft golden sand to shingle and pebbles. Beaches composed of larger sediment and rocks can present slip and trip hazards. In particular jagged rocks in the intertidal zone can present dangers to swimmers.

National Water Safety Management Programme

Understanding Open Water Hazards

Banks and Freeboards

Banks are the land running alongside a body of water, which are often covered in grass and plant life. The pathways on banks are not always well maintained, and rarely have safety rails or signage.

The freeboard is the area between the water surface and the top of the bank. The size of freeboards can vary considerably in height and composition (mud, stone, roots etc). Erosion under the water surface can 'hollow out' the freeboard causing the bank to be undercut and unsupported.

Hazards and Risks

- **Slip, trip and fall hazard** – During poor weather or at times of increased water flow they can become increasingly dangerous presenting many slip, trip and fall hazards.
- **Self-rescue difficulty** – High and crumbling freeboards can make self-rescue difficult or impossible at that location.
- **Bank collapse hazard** – Caused by people walking over undercut banks, and resulting in them falling into the water.

Understanding Open Water Hazards

Access and Egress

When considering activity and site suitability, consideration should be given to access and more importantly egress and where you can safely extract casualties. In the event of an emergency, first it is essential to identify entry and exit points if required to secure and stabilise a casualty. Secondly, thought should be given to the location's proximity to local emergency services and the ease of access for them to retrieve and transport a casualty. The figure below shows a pebbled beach that could lead to a broken limb and would be particularly difficult to manage a patient and transport them to a medical centre due to the rough and uneven terrain.

Slippery steep and high banks can present a number of serious access and egress problems. The pathways and banks surrounding open waterways are not always well maintained, and rarely have safety rails or signage. During poor weather or at times of increased water flow they can become increasingly dangerous presenting many slip, trip and fall hazards.

Freeboard can vary considerably in height and can make self rescue by climbing from the water very difficult. Banks can also collapse through people walking over undercut sections, resulting in an unintentional fall into the water.

Understanding Open Water Hazards

Water Speed and Water Force

The speed of water flow is simply how quickly the water flows past a fixed point.

Water Speed

In a channel of water, the speed of the flow increases where:

- The channel narrows or becomes smaller (width/depth).
- The gradient increases (how steep the water bed is).
- Water volume increases.

Water Force

Water force is the amount of 'push' that water exerts on an object or person. The volume of force that water exerts on an object or person is frequently underestimated. This is because water force does not increase at the same rate as its speed.

Water force increases by the square of the increase in its speed. This means that if the speed of the water doubles, the force of the water quadruples. Therefore a small increase in the water speed produces a much larger increase in the water force.

The table below demonstrates how the water force acting on a person's legs can increase with a relatively small increase in water speed.

Hazards and Risks

- Casualties can be knocked off their feet, causing injury.
- Casualties can be swept downstream, away from safety.

WATER SPEED	EQUIVALENT SPEED (APPROX)	WATER FORCE LEGS
1m/s (2.2mph)	Slow walk	40N (4kg)
2m/s (4.5mph)	Fast walk	160N (16.3kg)
3m/s (6.7mph)	Jog	360N (36.7kg)

(Speed - metres per second [m/s], miles per hour [mph]. Mass - kilograms [kg]. Force - Newtons [N]. 10 newtons applies the same amount of force to the legs as 1kg resting against them).

Understanding Open Water Hazards

Flood Waters

Severe flooding often results in drownings, although through basic planning and knowledge about what to do, many of these drownings are preventable.

Flooding is an overflow of water onto an area of land, normally a floodplain, usually caused by excessive rainfall or a burst waterway. Floodwater is commonly murky and opaque which can make it difficult to identify the specific hazards. Floodwater is extremely hazardous and entry into the water should always be avoided.

Flash floods provide a surprise element and catch people unaware. Floodwaters can create new watercourses with very fast flowing water where people can be unexpectedly transported with the flow and come into contact with obstacles and strainers becoming entrapped. In particular, water quality is always a significant hazard to be considered with floodwaters, which often become contaminated with sewage and overloaded with urban runoff.

Hazards and Risks

Understand and learn to assess the hazards of floods and floodwater.

- Pollution and Debris.
- Flowing Water.
- Water Force.
- Strainers.
- Water Quality.
- Deep/Cold Water.
- Hydraulics.
- Disease.
- Water Bed Composition.
- Eddies.
- Cushion Waves.

Understanding Open Water Hazards

Ice

Fresh water turns into ice at approximately 0ºC, and salt water at approximately -2ºC.

There are many factors that affect the strength of ice, these include:

- **Water depth and volume**
  Large bodies of water are slower to freeze than small bodies of water. Shallows around the shoreline freeze and melt more quickly than the deeper water, and ice near the shoreline is always weak.
- **Water flow**
  Currents and tidal movements can cause air bubbles and weak areas in the ice, and thin the ice from the underside. Moving water is also slower to freeze.
- **Obstructions**
  Trees, rocks, locks and other obstacles entering the water absorb heat from the sun causing the water around them to freeze more slowly and melt more quickly.

Hazards and Risks

In the UK, the ice is never strong enough to guarantee that it will support a person's body weight. Combined with the severe cold water immersion response that is experienced at temperatures of 0ºC and below, frozen water sites are very high hazard environments.

The main ice hazards at water sites are:

- Risk of falling through the ice.
- Severe cold water immersion response.
- Difficulty of self-rescue and rescue.
- Hypothermia (following prolonged exposure).

Physiology of Drowning and Associated Medical Conditions

Sarah Roberts, aged 12, drowned in Llanddwyn, North Wales in 2005. This very sad and unfortunate event that happened on a beach, considered to be relatively 'safe' although not lifeguarded.

The media frequently highlights drowning incidents occurring at what would appear to be innocuous environments presenting apparently low level hazards. This illustrates the key point that that there is no such thing as a safe water body!


'It's part of growing up to have a wonderful time on the beach. But bear in mind there are no safe beaches'

So what exactly happens when someone 'drowns'?

Immersion in water may initially be intentional but for a variety of reasons circumstances result in the victim not being able to extract themselves from the environment, leading to extended submersion and death.

The victim could be subject to factors outside of their control, for example, entanglement in submerged objects, natural or manmade, such as weeds or a shopping trolley. Alternatively, it could simply be that the drowning victim finds themselves in conditions beyond their capability which may be due to tiredness, cold, fright or a combination.

Open water environments are exposed to the elements and so conditions can change rapidly within minutes – from what would appear to be a safe water space into a danger zone, with the potential to endanger even the strongest swimmers.

Many people under-estimate the power of moving water and often over-estimate their personal ability. Immersion may be unintentional (as the result of a fall) or intentional (for example, in the case of a rescue, in response to someone in difficulty).

This is a particularly high risk scenario as the 'rescuer' may be acting outside of their capability levels, reacting on an emotional rather than rational response and without sufficient knowledge, skill or experience to effect a successful outcome.

Whatever has led to the drowning scenario, the drowning moment arrives when the victim has lost control of the situation and submerges for longer than they are able to hold their breath. In some cases they may never have had the opportunity or ability to hold their breath, being submerged unexpectedly.

Medical Conditions

Hypoxia

When water enters the mouth and airway as a result of immersion in water, the breathing function becomes impaired and affects the respiratory system. This leads to asphyxia, which is a severe lack of oxygen to the body arising from being unable to breathe normally. At some point extended impairment of breathing will lead to the casualty becoming unconscious.

The brain is particularly sensitive to a reduction in a good supply of oxygenated blood. When the oxygen supply is restricted, the resulting effect on the brain is called Hypoxia.

Hypoxia initially causes confusion and dizziness, followed by unconsciousness and death. Rapid removal from water and being allowed to breathe freely again may quickly restore the situation without any damage. Brain cells can only survive for a few minutes without oxygen before becoming damaged.

When a casualty is rescued from the water, lung irritation can occur through exposure of the delicate tissues in the lungs to water. A pneumonia-like infection may occur up to 72 hours later. The seriousness of this infection may be affected by the type of water i.e. sea, pool, fresh inland. In any case of suspected inhalation, the casualty should see a medical professional as soon as possible.

Hypothermia

Hypothermia is one of the prime contributory factors leading to drowning in open water. The body's normal operating temperature is 37°C. When the body loses more heat than it can generate and the core temperature cools to 35°C, the casualty is medically defined as being hypothermic. The effects of hypothermia can set in before this temperature is reached. As the body continues to cool, the symptoms become more severe. Initially the casualty may begin to shiver, but as they become colder so their reactions slow down, physical and mental agility are impaired leading to confusion and ultimately an inability to effect a self rescue.

At the height of summer, open water in the UK rarely exceeds 25°C. This is significantly lower than the normal operating temperature of the body plus water is a good conductor of heat accelerating cooling. Generally waters in the UK range from 4°C to 25°C, so the effect of cold water should always be considered in a risk assessment.

Medical Conditions

Cold Water Shock

Water conducts heat away from the body four times faster than air. The physical effects of entering cold water can be observed from temperatures as moderate as 25°C. Although the severity of the body's responses increase significantly in colder water, this means that the waters around the UK should always be considered to be 'cold' when planning any open water activities. Research suggests that the effects of cold water on the body may be largely accountable for the number of strong swimmers who drown in the UK each year. Of significant concern is the ability of the rescuer to function in cold water, as they too will be affected by cold water.

The cold shock response is likely to be a contributory factor for the majority of deaths in water below 15°C, due to the difficulty in maintaining a clear airway during hyperventilation (rapid breathing) and the effect on the heart (cardiac arrest).

The effect of entering cold water can be categorised into three stages:

Stage 1: Initial immersion responses – Cold shock response (0-3 minutes)

Immediately after immersing in cold water, the human body undergoes a number of instinctive reactions:

- Immediate gasp response – rapid cooling of the skin causes an immediate gasp response, the casualty's ability to hold their breath becomes severely limited and they begin to hyperventilate.
- Panic – hyperventilation combined with the surprise of falling into cold water commonly causes the casualty to panic.
- Vasoconstriction – skin cooling causes the circulation to the skin to become severely restricted (vasoconstriction). This causes the heart rate and blood pressure to rise. If the casualty has a pre-existing heart condition, the rapid increase in blood pressure could cause a heart attack.

Stage 2: Short term responses – Loss of performance (3-30 minutes)

After the cold shock response, the extremities (hands, feet, arms, and legs) start to cool, and blood circulation to the skin is restricted (vasoconstriction). As the muscles in the arms and legs cool, flexibility, strength, and stamina are significantly reduced affecting physical performance.

Stage 3: Long term responses – Hypothermia (30+ minutes): As heat is lost from the body, the casualty will start to become confused and disorientated until they eventually become unconscious.

Factors that influence Cold Water Shock include water temperature, gender, age, intoxication, adaptation to the cold and clothing.

Legal Issues

The law (in the UK) in an open-wwater environment is no different to the law anywhere else. Both common and statutory law apply in the usual way. Please note that it is beyond the scope of this programme to provide a comprehensive review of the legal system pertaining to management of groups around the water margins. The aim here is to provide an introductory summary of key legal instruments that apply to managing open water sites and groups.

Common Law

Duty of Care

We all owe a duty of care to anyone who may be affected by our acts or omissions. The standard of care varies depending on the level of responsibility and can be described as:

"To take reasonable care to avoid acts or omissions which you can reasonably foresee would be likely to injure your neighbour"

The duty specified is to take `reasonable' care – which might be defined as "what the reasonable man would have foreseen as being necessary." For example, we can see that someone supervising a group near water could reasonably foresee one of the group accidentally falling in and would need to make specific provision for this. To take this further, we could reasonably foresee that someone working near water might fall in and may therefore require a lifejacket or other form of Personal Protective Equipment such as a personal flotation device.

One way of demonstrating a responsible approach to our duty of care would be to conduct a risk assessment before going to a water site. Where the operator is employed or acting as an employee the risk assessment would be a specific requirement of the 'Management of Health and Safety at Work Regulations 1999' – one of several statutory `Regulations' that might apply.

As well as controlling any reasonably foreseeable risks, appropriate public liability insurance should be in place. Negligence arises from the breach (failure to provide – or `break') of duty.

Statutory Requirements

The 'Health and Safety at Work Act 1974' defines, in general terms, the responsibilities of everyone, employers, employees and suppliers, in a work based setting. The 1974 Act also gives power to a number of 'regulations' including, for example, the 'Management of Health and Safety at Work Regulations 1999'. Other regulations include, for example:

- Manual Handling Regulations
- Control of Substances Hazardous to Health
- Provision and Use of Work Equipment Regulations
- Reporting of Injuries, Diseases and Dangerous Occurrences Regulations 1995

The duties expressed in the 1974 Act and other related regulations include responsibilities around:

Condition of workplaces	*Written operating procedures*	*Safe systems of work*
General working conditions	*Written policy statements*	*Provision of first aid*
Personal Protective Equipment	*Information and Training*	*Signage*

Legal Issues

Management of Health and Safety at Work Regulations 1999

This set of regulations make more explicit what employers are required to do to manage health and safety under the Health and Safety at Work Act. Like the Health and Safety Work Act, they apply to every work activity.

Special mention is made of this Regulation because whilst almost all regulations refer to the need for risk assessment this one very specifically requires that all employers and self-employed persons:

"make a suitable and sufficient assessment of the health and safety risks to employees and others not in his/her employment to which his/her undertaking gives rise, in order to put in place appropriate control measures"

Other requirements of these regulations include, for example:

- Formal management control systems
- Competent person appointments
- Procedures for serious and imminent danger
- Job-specific training

Occupiers Liability Acts 1957 and 1984

The Act imposes upon the occupier of a premises a duty of care to any visitor using the premises for the purpose for which he is permitted or invited to be there. The term premises is interpreted to include open space such as adjoining land to a building and also objects upon it, for example ladders, grandstands, diving boards etc.

Any operator deriving income from the provision of services for visitors, including swimming for example, may well incur liability under the Occupiers Liability Act unless reasonable precautions are taken. These precautions may include signage and other controls.

Countryside and Rights of Way Act 2000

The Countryside and Rights of Way Act overrides the Occupiers Liability Acts in respect of natural features and rivers, streams, ditches or ponds whether natural or not. Some activities are specifically not allowed on access land. These are given as a list of general restrictions and include such things as:

- Using a vessel or sailboard on any non-tidal water
- Intentionally killing or disturbing any wildlife
- Bathing in any non-tidal water
- Hunting, shooting or fishing

Legal Issues

Right of Navigation

Less than 4% of the linear river resource in England and Wales has any public access or a right of navigation – so it is always advisable to check local ownership/rights arrangements before using a particular stretch. Lakes and quarries are also generally subject to owners rights.

The Crown generally owns tidal areas, and as such the general public have a presumed right of navigation over it. This means access agreements are not necessary on tidal sections of rivers, estuaries or indeed the sea itself.

The fundamental purpose of written documents such as the Risk Assessment(s), Safety Plans (NOP & EAP) and Safe Systems of Work is that employees have a clear understanding of:

– What the hazards and risks are and how they might be harmed as a result of work activity
– What steps have been taken (and what steps they – the employee – should take and continue to take) to control risks
– Specifically how a work task is to be performed so that the likelihood of harm is reduced to an acceptable or reasonable level

Safe Systems of Work

A safe system of work can describe a 'whole' process such as supervising a boating lake (although this is more likely to be covered in an operational manual (NOP) or it can be very specifically focussed on individual steps or risks within a task.

However these documents are approached, it is essential that employees have a clear, unambiguous grasp of how they might be harmed and what to do to avoid such harm. A safe system is likely to involved the following:

– Information: to raise awareness.
– Training: in how to do the job or carry out the task.
– Supervision: to supplement basic training.
– Monitoring: to ensure consistency.

Public Health Acts

It is always advisable to check with a local authority about any specific local bye-laws affecting activities at a particular site. These laws and regulations also impose on employers a duty to conduct operations in such a way as to ensure that members of the public are not exposed to risks to their health and safety.

Corporate Manslaughter and Corporate Homicide Act 2007

Under the Corporate Manslaughter and Corporate Homicide Act 2007, companies and organisations can be found guilty of corporate manslaughter as a result of serious management failures resulting in a gross breach of a duty of care. The Act clarifies the criminal liabilities of companies including large organisations where serious failures in the management of health and safety result in a fatality.

Enforcement

Compliance with safety management obligations is enforced by either the Health and Safety Executive or the Local Authority Environmental Health and Safety Department. These bodies have wide ranging powers including advice and guidance, prohibition and enforcement orders as well as prosecution for serious breaches.

Further Guidance

RLSS UK have two booklets that include sections on law, Safety on Beaches and Safety at Inland Water Sites. The HSE website is also a highly effective starting point for further information about any aspect of health and safety.

Risk Management

Everyone manages risk on a daily basis, for example when crossing a road, although they will not necessarily attribute the task to a cognitive process or be familiar with the term risk management. The objective is to identify significant risks and manage to acceptable levels. It is not practical to eliminate all risks and the cost of control measures needs to be proportionate to the benefits.

The Health and Safety Executive (HSE) define risk assessments as 'Identifying practical actions (controls) that protect people from harm and injury' and they fall into three main categories:

- **Generic** – applicable to the general environment or activity
- **Site or activity specific** – at that site or for that particular activity
- **Dynamic** – performed in situ, during an activity and acted upon, based on knowledge and experience. Results of a dynamic risk assessment can be used to inform a written generic or site-specific risk assessment for future reference.

Risk assessments can also be conducted to assess risk to equipment and/or facilities. Before going any further, let's start by defining some key definitions. To help illustrate the definitions more fully, consider a group on a kayaking trip:

- **Hazard** – something that has potential to cause harm, e.g. a weir, capsizing
- **Risk** – the probability that the hazard is realised, e.g. chance that a kayaker may get caught in the weir and drown
- **Severity** – the extent of harm and how many people will be affected, e.g. the number of kayakers that enter the weir and experience harm
- **Risk Rating** – evaluate risk and prioritisation of based on combination of risk and hazard
- **Control** – measures and procedures put in place to mitigate against risk, e.g. provision of training, appropriate guidance, wearing of a buoyancy aid and a safety drill in case someone gets trapped in the weir. Control measures are usually considered in the context of a cost benefit analysis.

To assist in writing a risk assessment, the Health and Safety Executive provide some straightforward guidance. It is important to remember that risk assessments are an ongoing process and not a one off exercise.

The key steps in completing a risk assessment are:

1. Identify Hazards – detail significant (not trivial) hazards that have potential to create harm.
2. Decide who might be harmed, including yourself, those you are responsible for and any bystanders. Equipment and facilities are also considerations.
3. Evaluate Risk (and extent of risk), i.e. what will be the severity of the hazards if they are realised and how many people will be affected.
4. Identify and implement control options
5. Monitor and Review to ensure that what has been decided is actually working and relevant. A review should be undertaken periodically or after an incident/accident/near miss.

In the Guided Learning Unit we will explore how best to make the right choices in a range of water-based scenarios. The risk assessment will only be as good as its implementation and therefore it is imperative that a robust monitoring and review system are in place and the assessment is communicated to all those it will affect.

National Water Safety Management Programme

Standard Operating Procedures & Emergency Action Plans

Operating Procedures

Safety Operating Procedures (SOP) are written documents and consist of a Normal Operating Plan (NOP) and Emergency Action Plan (EAP). Generally the NOP is set for a facility but can be interpreted for a site/activity setting out details of daily operations, including guidance to supervisors, layout, equipment and use, detailing user groups, hazards, activities, risks and safety requirements. Additional information will include communication procedures and control command. The EAP provides instructions and actions to be undertaken by staff in managing emergencies.

The SOPs are also the foundation for individual/group briefings and instructions. Wherever possible development of the SOP should include those who are required to comply with it. This offers the opportunity to engage with the leaders, benefit from their personal experience and also provide them with a sense of ownership.

The SOP will generally be written for a:

- Place or venue
- A trip or activity
- A combination

The SOP policy document will commonly include:

- The purpose of the procedure
- The group the procedures is targeted at, capabilities and limitations
- Who is in charge and what authority they command
- Standards of behaviour
- Qualifications and competencies required
- A risk assessment (or reference to a risk assessment) describing the hazards
- A dynamic risk assessment protocol
- A plan of the environment, outlining hazards, access and egress points, vantage-points emergency service provision
- Preventative strategies and Instructor responsibility
- Supervisory responsibility and supervisor details, including ratios for activities
- Communication strategy, including lines of communication and command, communication with the group
- Emergency provision, often a sub section
- Review procedures

The SOP must be communicated to all Instructors so that they are familiar with the policy and in particular lines of communication during an activity.

Standard Operating Procedures & Emergency Action Plans

Emergency Action Plan

Even with the most professionally organised activities, accidents can and will happen, because the natural environment and human nature or behaviour can be unpredictable. In particular when managing a younger group, over enthusiasm can lead to dangerous behaviour. So, even though a robust prevention strategy is in place, Activity Leaders need to be prepared to act quickly and effectively in response to an incident.

Emergency Action Plans (EAP) are formulated to ensure that in the event of an incident a rescue response system is in place. The EAP provides a plan of action; so that the right procedures are carried out in the correct order and all supervisors understand their role and the chain of command to effectively deal with the incident presented. Failure to act in an effective way can result to compound the problem, leading to an uncontrollable situation.

EAPs should be documented, communicated to each Activity Leader and practiced so that they know their personal role and their part in the team. A typical EAP will include step by step instructions on:

- Range of incidents, both water and land based
- Incident management
- Continuity of supervision of group
- Communication procedures during incident, both within the team and with external agencies
- Life Support and First Aid
- Aftercare
- Expected level of performance

Distinction should be made between ‘minor and major’ and ‘land and water’ based incidents so that proportionate incident management can be gauged, which may include separate procedures. Access to emergency services should be detailed, with estimated times of response. It is imperative that the EAP is reviewed regularly after every incident/accident to ensure any lessons learnt are incorporated in an updated version.

National Water Safety Management Programme

Comprehensive Water Safety Management Plans

A Comprehensive Water Safety Management Plan (CWSMP) is a detailed subject area requiring further study beyond the time available on this course. However, further below is a summary detailing an example of the content of a CWSMP for guidance.

Water safety management cannot be achieved through simply adopting one-off control measures based on previous incidents. This reactive approach does not identify weaknesses in the accident causation chain and will not identify underlying weaknesses in the operator's safety management system. If not corrected, such weaknesses can lead to further loss of life and litigation.

Organisations are strongly recommended to prepare Comprehensive Water Safety Management Plans (CWSMP), taking a proactive approach to managing activities. The processes of developing a CWSMP and risk assessment are inter-linked. However, it is good practice to distinguish between your safety management plan and risk assessment. Development of the risk assessment should be used to inform creation of the CWSMP.

RLSS UK offers advice and support in the development of CWSMPs, through the Water Safety Management Division. For assistance, please contact the RLSS UK Programme Manager (Beach and Open Water) on 01789 773994 or email watersafetymanagement@rlss.org.uk.

Comprehensive Water Safety Management Plan – example content:

A well prepared and communicated safety plan will promote a positive health and safety culture, and facilitate properly managed activities led by confident well trained and competent trainers/instructors.

A CWSMP usually comprises of:

- A description of the organisation, its aims and activities
- A health and safety policy statement
- Recognition of key legal implications that need to be complied with
- A risk assessment
- Normal Operating Procedures and Emergency Action Plans
- A Safeguarding Children and Vulnerable Persons Policy Statement
- Staff induction training programme and training records
- Equipment records, i.e. appropriateness, type, quantity, condition
- An incident/accident database covering RIDDOR
- Medical Statements for individuals with a pre-existing condition that requires medication or assistance.
- Communication strategy
- A process for regularly monitoring and reviewing the CWSMP

Emergency Management

Understanding the Lifesaver's Internal Response to an Emergency Situation

Being suddenly confronted with an emergency situation, whether survival or rescue, can be a daunting and scary experience. This may be emphasised if you are young, lack confidence, or if there is a crowd around the incident.

Upon recognising an emergency situation, you will normally experience the effect of adrenalin being released into your body. This is called the 'fight or flight' or 'acute stress' response, and it is this natural response that causes the feeling of 'butterflies in your stomach' which can lead to feelings of nervousness, anxiety and fear.

The feeling of nervousness that the adrenalin creates is natural and should be expected. Adrenalin actually helps to prepare your body for physical action by increasing your heart and breathing rate.

Through understanding this stress response, and using the Emergency Action Model, you will be able to make controlled, clear and correct decisions during an emergency. Actual practice is one of the best ways of learning to manage these feelings so rescuers are encouraged to practise as much as possible and to become aware of individual reactions.

Emergency Management

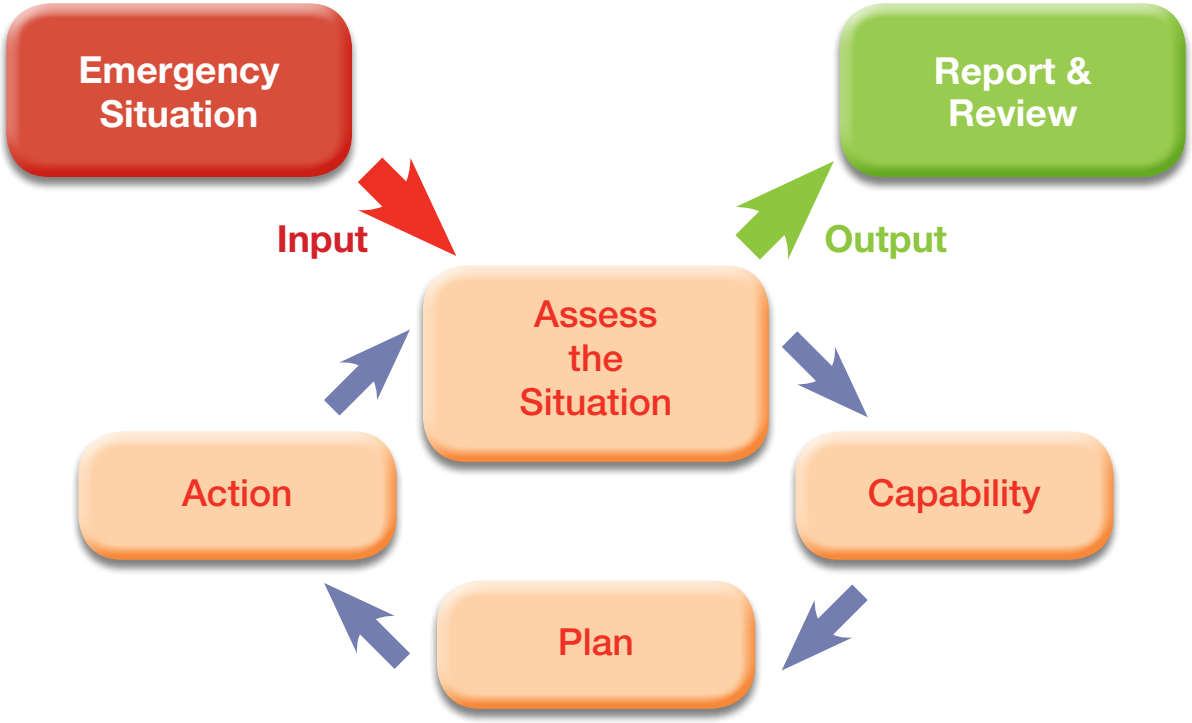
The Emergency Action Model

We have discussed the Emergency Action Plan and explained its purpose. The Emergency Action Model is a tool designed to help work alongside the EAP and provide more detailed practical actions when dealing with an emergency. In effect it provides a model for conducting a dynamic risk assessment. The Emergency Action Model helps deal with emergencies by:

- Encouraging thought before action
- Assisting decision making
- Directing actions/responses to be within the Rescuers own skills and abilities
- Emphasising continuous review of the situation

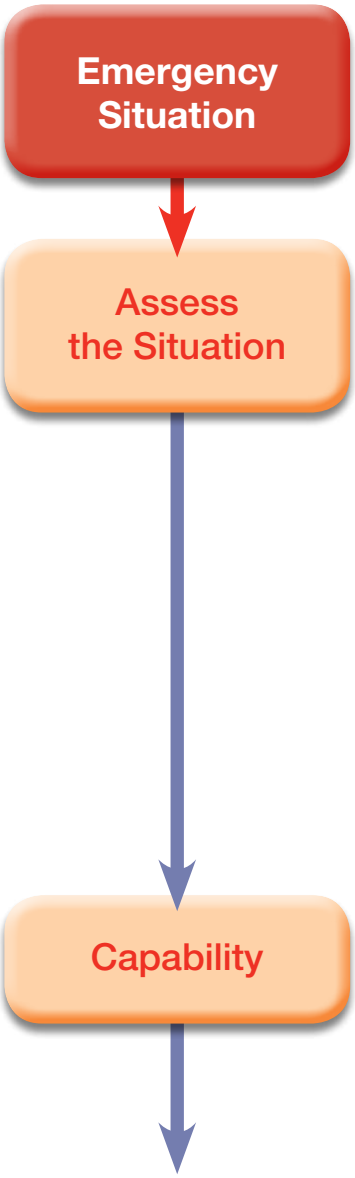
The Rescuer must ensure personal safety first and safety of the team before attempting to rescue a casualty. Frequent scenario and initiative training will reinforce the importance of the Emergency Action Model, as well as give Leaders the opportunity to put their theoretical skills into practical application.

Using the Emergency Action Model



The model begins with the Emergency Situation, then progresses in the direction of the arrows, and is completed by the incident reporting process.

Emergency Management



As soon as you are aware of an emergency situation, you should begin to consider what exactly is happening. This process begins with Assessing the Situation.

Gather as much information as possible about the incident, this will include:

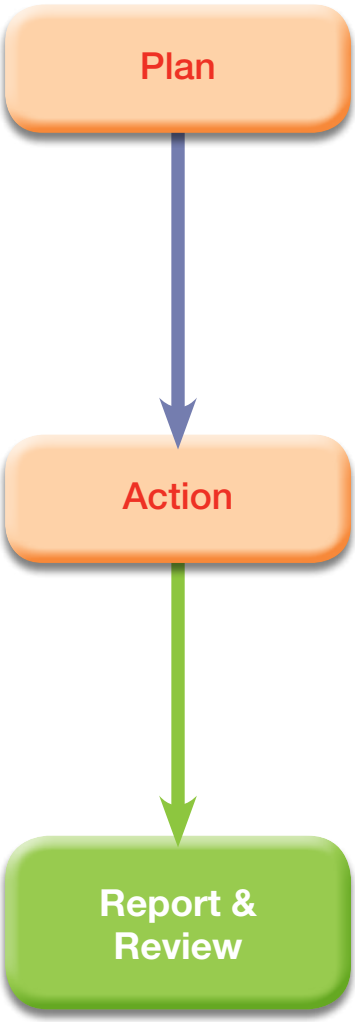
- **What** Exactly what is happening?
  What could happen if no action is taken?
- **Where** Precisely where is the incident/casualty?
- **Who** Who is the casualty?
  How many casualties are there?
  What is wrong with them?
  What are the casualty priorities?
- **Dangers** What are the dangers to the casualty?
  What are the dangers to you?
- **Aids** What aids are available in the area?
  Who can help?

At this stage in the model you must stop and think before continuing. You will be experiencing the acute stress response and reacting too quickly could lead to you making poor decisions that could endanger yourself, the casualty or other people.

Before making a plan of action, the rescuer must be fully aware of his/her capability and the capability of the team and availability of rescue equipment. Once all of the information has been gathered (which will probably be a quick mental process), a plan to resolve the situation can be formulated.

Continued on next page

Emergency Management



Once you have gathered all of the relevant information together, you can start to develop a plan to resolve the situation.

The priority in the plan must always be your own safety, and this means that the plan should always begin with calling for help, either from people around the emergency or by phone. The plan should also focus on choosing the least dangerous methods of helping the casualty.

Rescuers should be encouraged to think about the limits of their own skills, particularly swimming and fitness related skills. Consider how the environment or situation may affect your ability to perform the skills, such as the affect of cold water.

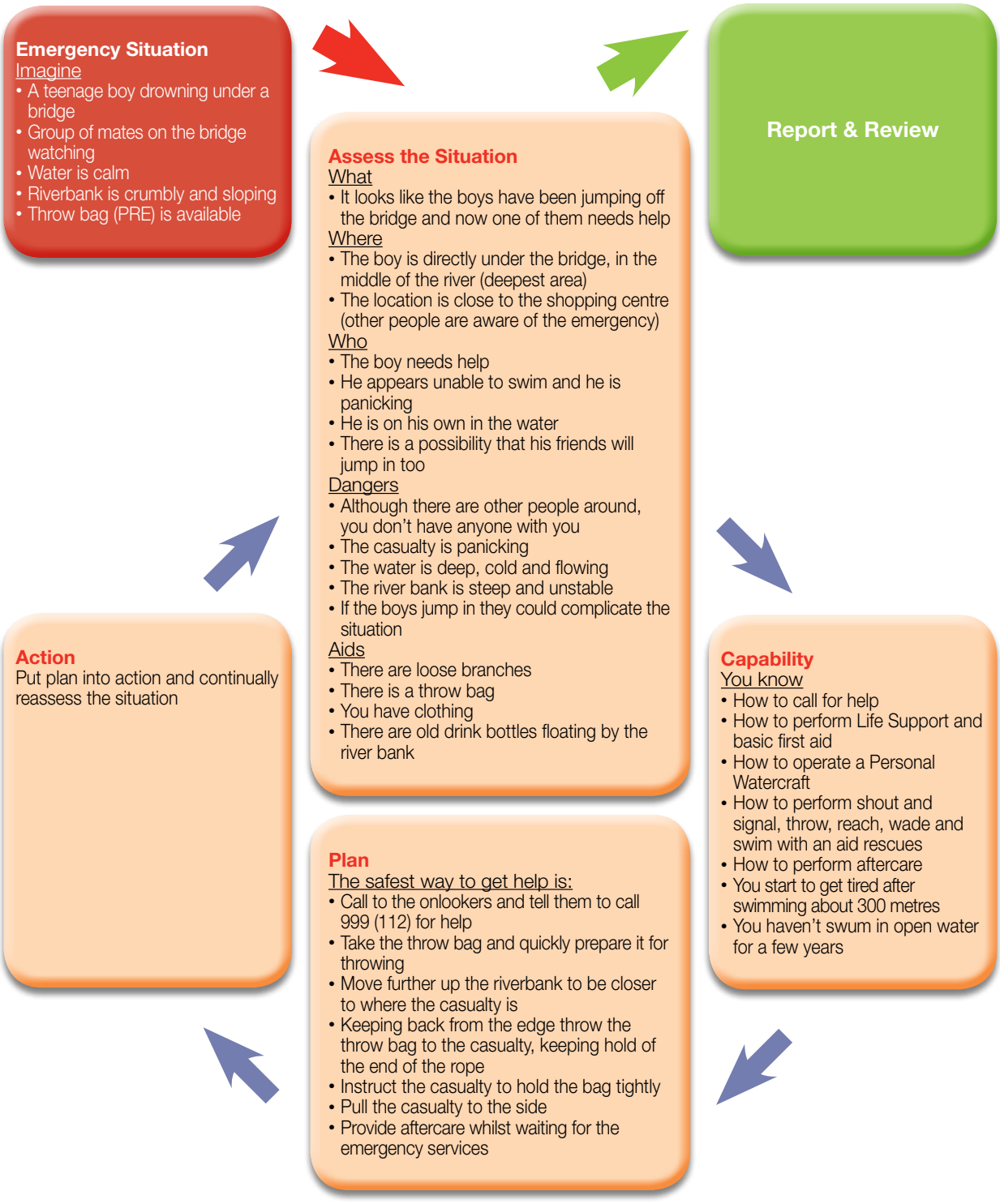
Having considered all of the information and developed a plan, you can now take action.

When taking the Action, you should continue to work through the cycle of the Emergency Action Model by continually reassessing the situation and adapting your Plan and Actions to resolve the situation safely and effectively.

For example, if upon entering the water you discovered that deep silt made it impossible to reach the casualty, this new information would change the situation, require different skills, and your Plan and Action would have to be adapted or changed.

After taking emergency actions of any kind (including self-rescue), you should always evaluate the events and consider what could be done to either prevent a recurrence of the incident, or how you could improve your response in a similar situation. During this process it is important that you send a report to RLSS UK as this may help to develop new safety strategies in the future.

An Example of Use



The Emergency Action Model - An Example of Use

Writing an Emergency Report

An incident report logs exactly what happened and details the rescue, casualty condition and aftercare and advice provided. It is imperative to write a report detailing any incident, as a backup in case there is any action questioning the integrity and adequacy of the rescue, against either the company or rescuer. In addition, a record of the incident can be used to improve safety systems.

The RLSS UK uses emergency reports to inform and develop lifesaving training and incident prevention strategies, as well as to contribute to the production of the official UK Drowning and Rescue Statistics.

Even minor events, such as a person falling into the water and having to climb back out, can provide important information about where these incidents take place, frequency of occurrence, frequency of injuries and other factors that may affect the guidance issued by the Society.

The Society welcomes phone calls to report all incidents and emergency events, and will gather as much information as possible over the phone before producing a written report. Rescuers may also find it useful to produce a written report as soon as possible after the emergency has finished (before details are forgotten).

When producing a report, you should include as much of the following information as possible, including:

- Name, age, gender and contact details of all rescuers and casualties
- Names and contact details of any witnesses
- Location, date and time of the emergency
- Nature of the incident with description of rescue and aids used
- Injuries sustained
- First aid and advice provided
- Which emergency services were on scene
- A diagram of the incident/location

Making Emergency Calls

By being aware of what will happen when you call the emergency services (999 or 112), you can communicate the relevant information quickly and efficiently. This will speed up the emergency response and may also affect the type of specialist equipment the emergency services bring to the scene.

When making an emergency call, the operator will ask for as much information as possible about the emergency, so you should be prepared to provide the following information:

- **Which** emergency service is required (the operator will help with this if the caller is unsure).
  - – Fire and Rescue
  - – Police
  - – Ambulance
  - – Coastguard
  - – Other local rescue units (Mountain Rescue, Cave Rescue, etc)
- **Where** the emergency is
- **Who** needs assistance
- **What** has happened to them
- **When** did the emergency take place or start

Personal Protective/Rescue Equipment

The first level of personal protection and advice to groups is protection against the sun. Protection from sun and UV radiation can be achieved through the Slip, Slop, Slap guidance and use of sunglasses meeting relevant BSI standards:

- SLIP on a T-shirt
- SLAP on a hat
- SLOP on some sun cream

Personal Protective Equipment

Footwear and Helmets

Footwear

Appropriate footwear should be worn. Anyone who may be required to perform a rescue should be wearing shoes or sandals which are:

a) Strong enough to protect the feet from jagged stones and possibly other debris such as glass including needles and sharps or rough surfaces

b) Light and flexible enough not to impede movement or become water logged and weighty. The specific operating environment will determine to some extent what would be the most appropriate footwear.

Helmets

Helmets are designed to protect the head where impact is possible, such as against hard rocks. Helmets require careful selection and specialist advice to ensure the right equipment is used. A protective open design, with vents, is generally used for water activities, as they offer protection but do not present a leverage hazard.

Wetsuits and Dry Suits

Whilst not always practicable wet and dry suits (with additional fleece insulation) provide the best means of overall thermal protection.

Wetsuits come in different thicknesses and should be chosen in relation to the activity. They need to fit properly and should be 'tight' - but not so tight that movement is restricted. In addition to warmth, wetsuits protect the body from abrasions and minor impacts.

Drysuits require careful selection and fitting as well as instruction in correct use and wear. They must be worn with thermal layers underneath as they are not insulated. A major problem with drysuits is leaking through zips not correctly closed which can lead to flooding and sinking. It is imperative that when fitting a drysuit, all air is expelled from the suit prior to entering the water. Drysuits require specialist advice, guidance and training on there proper and safe use. They should not be used for impact activity where the suit may get damaged that could lead to flooding and ultimately drowning

Whistle

Supervisors of others near water should carry a whistle to attract attention of members of the group or team members to alert danger or rescue. The whistle should be as loud as possible, not affected by water and close to hand. Lanyards require a 'snap breaker' to release under force, to avoid risk of strangulation.

Personal Protective Equipment

Throwlines

Throwlines, come in a wide range of lengths and strength and material. They should be highly visible, self-contained, float and be of suitable length for operating conditions.

Personal Safety Equipment

Personal Floatation Devices (PFD's)

There are two types of PFDs that are designed to be suitable for different aquatic activities. These are life jackets and buoyancy aids.

Life Jackets

Life jackets are designed for survival. They support the wearer at the surface of the water and help them to maintain a clear airway even if they are unconscious. To achieve this, life jackets have a high buoyancy rating (150+ Newtons) and the buoyancy is distributed to the front of the jacket to turn casualties onto their back. However, the buoyancy of life jackets makes moving into a swimming position difficult and swimming more exhausting.

Life jackets are advised for activities that have an increased possibility of the casualty becoming unconscious or immersed in deep water for a prolonged period of time.

Buoyancy Aids

Buoyancy aids are designed to keep the wearer afloat and mobile in the water. They have less buoyancy than life jackets (50-100 Newtons), and the buoyancy is more evenly distributed to enable a greater range of movement in the water including swimming. Buoyancy aids are not designed to turn the wearer onto their back when they enter the water and therefore may not help to maintain the airway of an unconscious casualty.

Choosing a PFD

Ensure that PFDs are suitable for the activity taking place. The main elements to consider are:

- **Type of PFD**
  The PFD must be suitable for the activity (life jacket or buoyancy aid).
- **Buoyancy rating**
  The buoyancy rating must be suitable for the activity and participant.
- **Size and fit**
  The PFD must fit and be worn correctly. Effectiveness is significantly reduced if PFDs are worn incorrectly or are the wrong size for the wearer. PFDs should always be fully fastened and adjusted to the wearer, including underleg straps if they are present (particularly on child PFDs).

Personal Safety Equipment

Life Jacket Summary

- Designed for survival.
- Maintain a clear airway.
- High buoyancy rating.
- Restricted mobility in the water.

Buoyancy Aid Summary

- Designed for inshore water sports.
- Moderate buoyancy rating.
- Moderate mobility in the water.
- Do not maintain a clear airway.

Rescue Aids

The use of both improvised and specialist rescue aids can help rescuers to increase their personal safety during a rescue, and increase the range of rescue techniques that the rescuer has to choose from.

Examples of buoyant aids:

Perrybuoy

Football

Lifejacket/PFD

Empty petrol can

Examples of reaching, wading and towing aids:

Rope

Rescue tube/Torpedo buoy

Oar

Brush

Lifesavers Direct

LIFESAVERS DIRECT Royal Life Saving Society

Lifesavers Direct – The Royal life Saving Society UK's online store and mail order catalogue. Lifesavers Direct provides equipment, clothing and product for everyone involved in Lifeguarding, Lifesaving and Emergency Response.

www.lifesaversdirect.co.uk

Level 1: Water Safety Awareness Module (Self Study Unit)