Organised Open Water Swimming

Places	Planning	People

Establishing and Developing Safer Venues to Support Mass Participation

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Foreword

Open water swimming is one of the fastest growing water sports in the country largely driven by the inclusion of both the triathlon and marathon swim in the Olympic programme. The subsequent media coverage has helped to raise the level of interest and awareness fuelling a demand for opportunities to train and compete.

There is also an increasing connection between swimmers and triathletes as they regularly swim alongside each other at open water swimming sessions taking place around the country. Many people now enjoy taking part in both sports.

As the governing bodies of triathlon and swimming, Triathlon England (TE) and the Amateur Swimming Association (ASA) welcome the growth in participation in open water swimming and would like to see more venues become available for coaching, training and competing. However, we also recognise a shared responsibility to provide guidance on how to manage our open water swimming activities safely.

Introduction

Compared to a swimming pool there are a much greater number of challenges associated with open water swimming. Whilst the number of major incidents to date is low the likelihood rises as participation rates increase. Currently, the standards of open water safety provision vary, with many reasons why this might be the case. Perhaps most commonly there is a lack of awareness and appreciation of all potential risks leading to subsequent planning failures.

This guidance document provides a framework for effective safety planning. It is intended to help establish new swimming venues as well as review safety management at existing venues.

Although every care has been taken in its development TE and the ASA cannot accept responsibility for any loss or negligence arising out of its use. The use of terms *"should", "consider", "good or best practice"* are opinions only and do not carry any legal compulsion.

Scope

This guidance covers organised mass participation swimming activities at both inland and coastal venues, whether as a standalone activity or as part of a triathlon (or similar multi-sport event).

It does NOT cover:

- Casual or unprogrammed swimming taking place without the knowledge of the venue owner/operator, which by its very nature does not normally include formalised safety arrangements;
- Competitive events subject to specific rules covered by separate governing body publications.

Other swimming activities covered by guidance from, or organised under the auspices of other organisations are referenced in the appendices as well as contact details provided.

Where Do You Start?

The increasing demand for open water swimming provides many opportunities. If managed properly it can be a complementary activity to other water-based sports and generate additional income for many venues. Income streams can include:

- Facility hire
- Activity charge
- Safety support
- Car parking
- Wetsuit/equipment hire
- Secondary spend.

There are many different types of water and locations which can accommodate open water swimming. However, each venue is unique and converting an initial idea or concept into a safe and viable activity requires careful and thorough planning.

Some venues may prefer to organise the activity themselves or bring in a third party to run an activity on their behalves. Others may simply prefer to hire their facility out to an external organisation. Whatever the arrangement, investing time and preparing thoroughly from the outset can save time and money further down the line by identifying potential problems or costs.

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There will always be a market for venues with basic facilities particularly from experienced open water swimmers who are confident in their ability. However, attracting and retaining new swimmers to support the continued growth of open water swimming will need a more customer-focussed, inclusive approach as well as improved and/or dedicated facilities. It is not unreasonable for swimmers paying to attend an organised session to expect:

• A welcoming environment
• A safe environment
• A well-equipped session
• A well-organised session.

These themes are explored further in Appendix 8 which proposes a schedule of facility requirements and considerations.

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Key Considerations

The table below highlights some of the key considerations for a venue operator.

Subject Area	To Check and/or Discuss with the Activity Organiser
VENUE	
Do you own the venue or does the operating contract allow open water swimming to take place?	If the activity requires support/permission from a range of stakeholders/organisations ensure that the organiser has all necessary authorisation in place.
Has the venue previously been used for organised open water swimming?	If the venue has never been used previously for organised open water swimming the timescale for planning, water quality checks and promotion is likely to be longer (suggest a minimum of 12 months).
Do you use the venue for other water-based activities? Is there potential for collaboration with others (e.g. to provide safety boats) or could there be conflict?	Local support is far more likely to generate a sustainable activity and local knowledge of the water can be invaluable for safety support. If there is a potential conflict what steps can be taken to eliminate or minimise the conflict.
Do you have sufficient car parking and space around the site for the anticipated numbers?	Check what numbers are anticipated and what, if any, infrastructure (e.g. marquees) the organiser will be bringing in. Also consider an area for secure bike storage as some, triathletes in particular, will cycle to swim sessions as part of their training routine.
Do you have an emergency exit route?	If there isn't a designated emergency route is it possible for the organiser to identify and maintain one during the activity?
INSURANCE	
Have you researched the implications to your civil and public liability insurance if open water swimming activities take place?	Contact your insurer to explore any implications.
WATER QUALITY	
Do you test water quality and monitor water temperature? Do you have any historical information available?	If the water quality is not routinely tested who will pick up the costs associated with a testing regime? The water quality testing regime should be appropriate to the frequency of the activity, i.e. if open water swimming takes place regularly the testing should be more frequent than for a one-off event.
Has the venue previously been affected by blue-green algae?	Previous presence of blue-green algae means an increased likelihood of future occurances. This is not necessarily a problem but historical information can help identify times of the year to avoid. If testing is required when algal blooms are present who will pick up the costs?
Are there any obvious potential sources of pollution or contamination e.g. farm run-off, sewage outlets, bird flocks?	If there are obvious sources of contamination or pollution it may be possible to identify higher risk times e.g. flood water, when it may be appropriate to suspend swimming due to deterioration in water quality.

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Subject Area	To Check and/or Discuss with the Activity Organiser
SWIMMING AREA	
Are there any obvious hazards that can affect the proposed swimming area – e.g. fast currents or rips, weed beds, floating debris, overhead branches?	Discuss and agree the proposed swimming area with the organiser. Explore the option of a contingency swimming venue/area.
PLANNING	
Do you know what safety documentation/plans should be in place?	The organiser should be able to provide a risk assessment for the activity and operating procedures for how they propose to manage both the activity and any incidents. Their plans should take into account any applicable safety plans for the venue.
Do you have local knowledge/expertise that could help the organiser develop their plans?	Local knowledge about the water and the prevailing conditions can help develop more robust safety plans.
Has the organiser informed other relevant agencies such as HM Coastguard, Harbour Master?	
THE ORGANISER	
Is the organiser suitably experienced/competent and/or qualified to run the activity?	If you do not know the organiser or do not have knowledge or understanding of the demands of open water swimming consider either seeking references from other venues and/or approaching the appropriate governing body.
Is the organiser insured to undertake the activity?	Ask the organiser to provide evidence of insurance to cover the activity.

Additional considerations for an **organiser** include:

Subject Area	To Check
VENUE	
Are the toilet, shower, First Aid and shelter facilities where provided sufficient for the anticipated numbers?	Will it be necessary to bring in additional infrastructure?
SWIMMING AREA	
Is the area of water available sufficient in size and of suitable depth to accommodate the activity?	What is the maximum number of swimmers that can be in the water at any time?
Can swimmers enter and exit the water safely and easily?	Will it be necessary to mat the entry and exit points or bring in a pontoon/ramp?
Is it easy to account for the number of swimmers entering and exiting the water?	
Is the swim course easy to follow?	How many buoys will be required? Will lane lines be required at any points?
Is there a contingency venue/area in the event of unsafe conditions?	
SAFETY COVER	
Is there access to a sufficient number of suitable safety boats and paddle craft?	If appropriate safety craft are not available at the venue where can they be sourced? Does the venue impose any restrictions on craft that need to be taken into account?
Is there a suitable location for launching craft and landing any swimmers recovered from the water?	Will it be necessary to bring in a temporary pontoon?
Is the safety support competent to provide effective cover in the prevailing conditions?	Check for evidence of experience and competence.
Is the level of medical cover appropriate to the activity and number of swimmers?	
EQUIPMENT	
Do we have all the equipment that we need for the activity?	See Appendix 5 for a list of items that may be required.
COSTS	
Have we factored in all major cost items: For example, • Facility hire • Safety cover • Water quality testing • Temporary infrastructure • Medical cover • Insurance • Equipment hire/purchase.	Will the proposed charge cover the cost so that the activity is viable and sustainable? **NOTE:** The cost of water safety cover could be a significant cost relative to other costs – if it is not adequately factored into the budget at an early stage there is a risk that cost-saving decisions may lead to a reduction in the level of cover. Any perceived compromising of safety to save money could be considered negligent.

Risk Factors

The risk factors for open water swimming fall into three broad areas:

- **PLACES** – covering issues relating to the venue/environment and the type of water
- **PLANNING** – covering the type of activity and appropriate safety arrangements
- **PEOPLE** – covering the people responsible for providing safety cover as well as the swimmers themselves.

These are illustrated in more detail below:

Organiser/Club
- Experience
- Competence
- Insurance

Water Safety
- Experience
- Competence
- Resources

Water
- Type
- Quality
- Other users

Risk Management
- Risk assessment
- Normal Operating Procedures
- Emergency Action Plans

Open Water Swimming Venue

Swimmer
- Number
- Experience
- Capability
- Wetsuit/Non-Wetsuit

Facility
- Suitability
- Infrastructure
- Insurance/Legal

Activity
- Training
- Coaching
- Competition

◆ **Place**   ◆ **Plan**   ◆ **People**

The guidance covers each of these areas in detail and provides background information to enable venue operators and organisers to plan for safe open water swimming activities.

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Places

Course Design

Course design has a significant impact on both safety management and swimmer experience. Some things to consider when designing a swim course include:

Course shape

Is the course easy to follow? The simpler the course the less likely it is for swimmers to become disorientated and go off course. Straight line, rectangular, triangular and circular courses are generally easiest to follow. Out and back courses appear straightforward but consider arrangements to ensure that swimmers swimming in opposite directions are effectively segregated and cannot swim into each other.

For larger groups of swimmers:

• Try to ensure that there is sufficient distance to allow swimmers to spread out prior to making the first turn?

• Try and avoid sharp turns around buoys as far as possible.

Marker Buoys

Are the turn buoys in particular large enough and brightly coloured so that they can easily be seen at water level? Buoys that sit a minimum of 1 metre above water level are recommended even for short courses on flat water. Consider additional marker buoys, which may be smaller than the turn buoys, positioned at regular intervals to help swimmers navigate. Are the buoys securely anchored so that they do not move in currents or high winds?

TIP: In addition to marker buoys are there any features on the landscape that can also help swimmers determine the swim direction if appropriately briefed e.g. an electricity pylon, trees or buildings on the horizon.

Briefing Area

Is there an appropriate area to conduct a pre-swim briefing? It should be large enough to accommodate the anticipated number of swimmers and preferably with a good view of the course.

TIP: Consider provision of a sheltered area to protect swimmers from the elements before (and after) they swim.

Swim Preparation Area

Is there a defined area where swimmers can safely acclimatise to the water temperature prior to undertaking their swim to minimise the impact of cold shock (see later)? This area does not need to be large and only needs to be deep enough for swimmers to fully immerse their body and put their faces in the water. Ideally swimmers should be able to wade into this area.

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Access and Exit Points

What are the underfoot conditions – will it be necessary to use matting or a ramp construction to assist swimmers?

At the start:

- Is it easy to account for the number of swimmers entering the water?
- Is there sufficient space to accommodate the anticipated number of swimmers setting off at any one time?

At the finish:

- Is the finish easily visible from a reasonable distance at water level or can it be suitably highlighted?
- Is there a reliable and quick method to check-out all the swimmers as they leave the water?
- Is it possible, or likely, for swimmers to exit the water at places other than the official check-out? If so, can a system be put in place to ensure that such swimmers are accounted for?

Additional Safety Considerations

Does the course design eliminate or minimise the need for powered safety craft in particular to cross the swim line? If powered craft do need to cross the swim line what arrangements can be put in place to manage the crossings safely?

Is there a dedicated emergency landing point where casualties can be transferred to the land-based support? It is recommended that the emergency landing point is located away from where swimmers enter or exit the water.

Is there exclusive use of the water (and therefore fewer restrictions on course design) or are there other water users/activities that need to be taken into account? Where other activities are taking place at the same time is it possible to take steps to provide a safe swimming area?

Disability Swimming

The course design for disabled swimming need not differ to that for able-bodied swimming. The main considerations should be on the entry and exit arrangements bearing in mind the needs of:

- Wheelchair users;
- Swimmers with prosthetic limbs;
- Swimmers who require crutches;
- Visually impaired swimmers.

Entering the water should be done in a safe and controlled area, ideally from a slipway or pontoon that provides an even, consistent surface and enters into deep water. The area should be wide enough to accommodate the swimmer and their helper(s).

The requirements at the swim exit are similar in terms of the underfoot conditions and width but the mechanics of swimmers exiting the water varies depending on the nature of the disability, as well as the individual. Ideally, only trained water handlers should be used at the swim exit, particularly for swimmers who require lifting from the water– personal handlers who have no experience or training should not be used to avoid injury to either themselves or their swimmer. The British Triathlon Federation has developed a safe method for helpers to carry athletes to and from the water, details of which can be obtained from Triathlon England.

Water Quality

Whilst water quality at open water sites can be influenced by a number of different factors the most likely cause of ill-health amongst swimmers is from microbial contamination.

As water quality testing can only provide a snapshot of what is present at the time of testing it is preferable to build a profile by testing regularly to help identify if there is underlying problem. Responsibility for testing and any associated costs will need to be taken into consideration and, depending on the type of water may have very limited value. Further advice and guidance should be sought, initially from the local authority health department, before starting open water swimming.

The principle organisms of concern are described below and Appendix 3 provides further information on water testing.

Blue-Green Algae

Cyanobacteria, more commonly known as blue-green algae, are found at many open water sites. Health risks are associated with the direct contact of exposed body parts such as eyes, ears, mouth and throat OR via swallowing or inhalation. Common symptoms include an upset stomach, vomiting, diarrhoea and fatigue but more severe cases can lead to organ failure. Some people with sensitive skin can have an allergic reaction to blue-green algae which can be aggravated by using a wetsuit.

The presence of blue-green algae does not necessarily imply a health hazard if the algal cells are dispersed throughout the water. It is the tendency to form dense scums or blooms, and the accumulation of toxins at hazardous levels, which poses the greatest risk. Whilst it is difficult to predict a blue-green algae bloom previous history is a good indication as blooms tend to follow an annual cycle.

The weather is the primary influence on where blue-green algae will accumulate. When the cells are buoyant they accumulate on the surface and wind drives them to leeward shores and bays where they form blooms. The blooms can be quickly broken up by wave action and re-dispersed to other areas so swimming in or close to areas with blooms should be avoided.

Enterobacteria

Faecal pollution of water is a risk to swimmers because it may contain a number of pathogenic enterobacteria. Common sources of faecal pollution include surface water discharges (especially during periods of heavy rainfall), livestock, industrial processes, farming activities, domestic animals and wildlife.

There are a number of illnesses and infections that can be contracted from contact with and/or ingestion of enterobacteria. These are generally mild and can include gastrointestinal infections and infections of the upper respiratory tract, eyes, ears nose and skin.

Bacterial testing is used to monitor the presence of organisms of faecal origin indicating an increased risk of pathogens being present. There are water quality standards for designated bathing waters, based on regular testing and retrospective analysis but many venues used for open water swimming are not designated bathing waters.

Weil's Disease

Leptospirosis (more commonly referred to as Weil's Disease when hospitalisation is required) is an acute human bacterial infection associated with fresh water, as the bacteria cannot survive in salt water. It is usually caught through water-borne contact with infected animal urine (usually associated with rodents, cattle or swine). The bacteria typically enter the body through cuts or the lining of the nose, mouth, throat or eyes and after an incubation period varying from three days up to three weeks can lead to a number of flu-like symptoms including:

- Severe headaches
- Red eyes
- Muscle pains and fatigue
- Nausea
- Elevated body temperature
- Potential development of a skin rash.

In severe cases complications can be potentially life-threatening but the risk of contracting Weil's Disease from recreational water is very low.

Swimmer Advice

As there is a risk of some contamination at all open water locations, even if only at low levels, swimmers should be advised to follow a number of precautionary hygiene measures including:

Pre-swim:

- Covering any open wounds.

Post-swim

- Showering in fresh water;
- Rinsing and cleaning all swimming kit thoroughly – including goggles; and
- Washing hands before eating and drinking.

The use of disinfectant may also offer protection against some pathogenic bacteria but not blue-green algae as it doesn't kill the cells.

Swimmers should also be made aware of the risks of the associated infections and advised to seek medical advice if they develop any of the symptoms described above for a period of up to three weeks after swimming in open water, highlighting where they have been swimming.

NOTE: Anyone involved in providing support to the swimmers who may also come into contact with the water should also be advised to follow the appropriate basic hygiene rules.

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Planning

Legal Context

Before beginning an open water swimming activity it is important to have a basic understanding of any legal obligations under either Statutory Law (i.e. enacted by Parliament) and/or Common Law where principles have been developed through cases being brought before the courts.

> **Duty of Care: A requirement that a person acts towards others and the public with watchfulness, attention, caution and prudence that a reasonable person in the circumstances would.**

Every organiser has a "duty of care" under UK Common Law to take reasonable care to ensure the health and safety of everyone either involved in or directly affected by their activity. For open water swimming this may include swimmers, safety cover, spectators, coaches, officials and the general public. If an organiser fails to meet the appropriate standard of care they may be considered negligent. Similarly, owners and operators have an obligation to ensure activities carried out on their land are conducted safely.

Insurance

It is also important to ensure the appropriate insurance is in place to cover the people involved in delivering the activity and the swimmers. This might include:

- Public Liability Insurance
- Employers Liability Insurance.

Activities organised by clubs may be covered by the insurance of the organisation the club is affiliated to but this should be confirmed in advance.

Activities organised by other individuals or organisations (including charities) will require independent insurance.

Venue owners/operators will also need to confirm they have the appropriate insurance in place to accommodate open water swimming.

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Risk Assessment

As part of their "duty of care" organisers must "**make a suitable and sufficient assessment of the risks"** to the people who are involved or affected by their activity. By undertaking a risk assessment the organiser is able to demonstrate they have considered the risks and taken reasonable steps to manage them. A good risk assessment drives action – it doesn't avoid risk. The risk assessment must be specific to the venue and the activity.

Whilst everyone directly involved in a swimming activity has some responsibility for ensuring their own safety the organiser has to strike a balance between self-reliance on participants and management interventions.

The most effective risk assessment process is ongoing, starting at the earliest opportunity, as part of the initial venue research, and continuing up to and during the activity itself. Furthermore, if the activity is to take place again the risk assessment should be regularly reviewed.

It is neither possible nor necessary to ensure that open water swimming is entirely risk free. The focus should be to identify the main hazards and controls that can be put in place to either eliminate risk or, if this is not possible, manage it to an acceptable level.

Recording The Findings

The risk assessment should be recorded and for each potential hazard it should identify:

- The level of risk;
- Who it may affect;
- The control measures; and
- Ideally who is responsible for implementing each control.

Appendix 4 illustrates how the result of an open water risk assessment may be recorded using a simple traffic-light system.

Good practice:

- **Don't over-complicate the process, focus on the main hazards and document the findings in an easy to understand format.**
- **Don't undertake the risk assessment as a purely "desk top exercise". It should be informed by a detailed site visit(s).**
- **Only include control measures that will be implemented – don't include measures to simply make the risk assessment look more impressive.**
- **Seek input from others who have experience of the venue and/or open water swimming safety:**
  Local lifeguard clubs, sailing clubs or canoe clubs may be able to provide support. They can be approached directly or via the appropriate governing bodies.
- **Recognise that children's risk perception skills will not be fully developed.**

Undertaking a risk assessment is only part of the safety planning process. Key actions from the risk assessment should be used to inform and help develop operating plans and procedures for the activity.

There are two elements:

Normal Operating Procedures: (NOP) describe how the activity will be managed under normal (non-emergency) circumstances. They might include procedures for registering/briefing swimmers, counting swimmers in and out of the water and supervising swimmers in the water.

Emergency Actions Plans: (EAP) describe how foreseeable incidents will be managed. Potential incidents may include a missing swimmer, a panicking swimmer, an injured swimmer, an unconscious swimmer and a course evacuation.

Example:

The RISK ASSESSMENT identifies that there is a risk that a swimmer could go missing.

The NOP describes the process by which swimmers will be counted into the water and counted out again. It also details how the swimmers are supervised whilst they are in the water.

The EAP describes what action will take place in the event of a swimmer going missing.

The EAP should clearly identify **what** action will take place, **who** is responsible and **how** it will be communicated. Points to consider:

- The EAP should ensure everyone involved in providing safety cover is able to work together and with other others (e.g. medical support).

- Rehearsing key scenarios (e.g. recovering a swimmer into a safety boat, transferring a casualty to the land-based support) provides the best test of arrangements and an opportunity to practice things in a controlled environment.

- The EAPs should be robust enough to ensure that the safe supervision of the other swimmers can continue even when some resources are managing an incident.

Go/No Go Criteria

The green light for swimming activity to take place as planned should be determined by the ability to fulfil the arrangements described within the NOPs and EAPs. If they are compromised then it is very likely that the activity will need to either be revised or even cancelled. Examples might include:

- A reduction in the level of safety craft available;

- A delayed start resulting in different tidal conditions presenting more challenging conditions for swimmers.

Drawing up a list of key go/no go criteria can help the decision making process as well as direct the development of contingency plans.

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Control Measures

Safety Cover Levels and Positioning

For each swim the safety cover should be organised, resourced and competent to provide effective supervision in the prevailing conditions.

When assessing the level and positioning of safety cover some key questions should be considered:

- How will we know if a swimmer gets into difficulty at any/all point on the course?
- How will we ensure that swimmers all follow the correct course?
- If anyone gets into difficulty how can we provide support quickly to prevent the situation from worsening?
- If a swimmer sinks can the safety cover get to them?
- If there is a serious incident how will we recover the swimmer(s) to land quickly?
- If a safety craft is dealing with an incident will there be sufficient cover to maintain appropriately competent cover for the remaining swimmers still in the water?

NOTE: If other activities are taking place on the water at the same time as swimming a further question would be:

- How will we ensure that other water users are aware that are swimmers in the water and where they will be swimming?

Given the differing types of water and prevailing conditions, applying generic standards to the level of safety cover based on course design, swim distance or ratio of safety units to swimmers is not appropriate. However, **one safety unit per 20 swimmers and swimmers being no more than 50 metres from safety cover** provides an initial basis for identifying cover levels and positioning before considering other factors which may indicate a need to potentially increase or decrease those levels.

> **Where there is a marked scaling up of risk (e.g. non-wetsuit swims, long distance swims, high percentage of novice/inexperienced swimmers, tides and currents) the water safety arrangements should take this into consideration and, most likely, increase the level of resources.**

Example: In an open sea swim with mixed ability swimmers some of whom may not be wearing wetsuits it may be appropriate to increase the safety resources and reduce the distance between safety craft and swimmers. Conversely, for a swim taking place in the closed environment of a dock with experienced swimmers and easy/quick access to land based support around the course it may be appropriate to reduce the level of safety craft.

The most effective cover in the majority, if not all circumstances is likely to be provided by:

- A mix of water-based and land-based safety cover. Land-based cover focussing on the swimmer entry and exit points and possible "spotter" support around the course. Water-based safety cover to provide supervision around the course.
- A combination of engine-powered and human-powered craft on the water.

Safety Craft

When identifying appropriate safety craft it is important to understand that whilst there are various engine-powered and human-powered craft available not all are suitable for use as safety craft and that each type may be appropriate in certain situations but not in others.

Appendix 5 illustrates different types of craft and the relative merits along with the types of water/conditions to which they are best suited.

In broad terms:

Powered craft are best suited to recover casualties from the water and transport them as quickly as possible to the point of transfer to the land-based support. (**NOTE:** A minimum of two people are required – one to drive and one to recover and support casualty).

Human-powered craft are more suited to guiding and closely interacting with swimmers and providing initial support to casualties to the point of transfer to the powered support craft.

The competency of the operator is as important as the suitability of the craft. Similarly any land-based safety support must be competent and appropriately equipped to fulfil their function. This is covered in greater detail in the PEOPLE section of the guide.

> **It is important that any craft performing a safety role is not given additional duties that compromise their primary function. Any craft supporting other duties e.g. officiating, should not be considered part of the safety cover.**

Monitoring Swimmers

The ability to account for all swimmers is fundamental to the safety arrangements. As a minimum this should include a method of accurately counting swimmers into the water at the start of the swim and back out again at the end.

However, accounting for swimmers should also include the ability to quickly identify:

- Any swimmers who are removed from the water into a safety boat.
- Any swimmers who retire from the swim and leave the water at any point other than the recognised end point.

NOTE: Electronic systems where swimmers wear a "chip" can be a useful tool to support the monitoring of swimmers but it is recommended a manual back-up is also used as electronic systems can be limited by:

- System failure;
- Swimmers losing their chip making them "invisible" to the system;
- Inability to record swimmers who do not pass over a recording mat; or
- The time taken to extract meaningful information from the system in the event of an incident.

Closer Supervision

For swimmers who may require closer supervision (e.g. medical issue, first-time, very nervous) the use of a specifically coloured swim hat can provide a discreet method of identifying them to the safety cover.

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Communication

Effective and efficient communication underpins a coordinated, timely and appropriate response to incidents. The communication plan should include both land-based and water-based safety cover and a back-up system in the event of the primary method of communication failing.

The nature of the environment and activity is likely to limit the effectiveness and/or suitability of mobile telephones and the use of radios may not be practical or affordable. The use of visual signals and audible signals e.g. whistle can be particularly effective for rapid communication and identifying the location of an incident.

Medical Support

All open water swimming activities should have plans to deal with incidents requiring medical intervention. Basic First Aid support should be available as a minimum but where the risks increase e.g. with greater numbers of swimmers, increased swim distances or reduced water temperatures more extensive medical support should be considered.

Identifying the appropriate level of medical support should be based on a similar assessment of the risks used to determine the level of safety support, ideally with the input of someone with a medical background and an understanding of the risks of open water swimming.

In the event of an emergency it is essential to ensure the response is coordinated to optimise the likelihood of a successful outcome. Things to consider and ideally rehearse might include:

- How will the land-based support team be made aware of the incident and the potential seriousness?
- Where will the casualty be taken to by the safety boat – is there a dedicated landing point close to medical facilities with sufficient working space for the land-based support to operate?
- Who will direct/coordinate the transfer from the safety boat to the land?
- Who will transfer the casualty from the boat to the land and how will they do it?
- Who will transfer the casualty to the medical facility and what route will be taken?
- Who will contact the emergency services for further support?

People

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Swimmers

Pre-Swim Preparation

Helping swimmers to prepare properly for the demands of an open water swim before they enter the water can make a significant contribution to their safety as well as their enjoyment. This is particularly important for swimmers who may never have experienced open water swimming before.

If providing written information it should be kept as clear and simple as possible. However, you should not assume that the information will be read so any key messages should be reinforced at a pre-swim briefing.

Minimising Stress

Research into open water swimming-related fatalities around the world has identified Sudden Cardiac Death (SCD), rather than drowning, as the likely cause of death in the majority of cases.

One possible mechanism of SCD in open water swimming, referred to as Autonomic Conflict (AC), suggests that anxiety, stress, anger and over-competitiveness combined with water entering the nose and throat and a requirement for breath holding may produce a fatal arrhythmia in susceptible people.

Whilst it is not possible to completely mitigate feelings of anxiety and stress experienced by individual swimmers there are some practical steps that can be taken to reduce them. These include:

- Briefing: to include a description of the course and the safety arrangements and action to take if they get into difficulty. Encourage those that are nervous or new to open water swimming to start slowly and towards the back of the group if they are unsure of their swimming ability relative to others.

- Acclimatisation: giving all swimmers the opportunity to acclimatise to the water temperature and regulate their breathing in a defined area before swimming.

- Controlling the group size: limiting the number of swimmers entering the water at any one time to prevent over-crowding, reduces stress on nervous swimmers in particular and enabling the safety team to reach swimmers more easily if necessary.

- Providing sufficient space: to prevent over-crowding so that swimmers can find clear water more easily.

- Separating groups: reducing the likelihood of faster swimmers swimming into and over slower swimmers.

- Increasing the number of safety craft at the start of the swim where stress levels, confusion and turbulent water are likely to be at their greatest.

> **Data collated from the Great Swim series has identified that the greatest number of interactions with swimmers (from simply giving reassurance to removing swimmers from the water) occur in the first 400 metres of the swim. The vast majority are stress/confidence related as water temperature is less likely to be a factor so early in the swim, particularly as these swims are wetsuit-compulsory.**

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Managing Groups

There are various ways of managing entry and exit from the water and controlling group sizes to provide a better experience for swimmers as well as creating a better environment to manage their safety. Appendix 7 highlights some of the options that are available and considers their relative merits.

Disability Swimming

The simplest way to make activities more inclusive is to either invite interest from disability organisations or work directly with individual swimmers who have expressed an interest in joining the activity to find out more about their disability and explore ways to manage the possible implications.

For example: Certain disabilities, particularly spinal cord injuries, inhibit the body's ability to control temperature so these swimmers can become very cold very quickly. Wearing a wetsuit to provide additional insulation, having an efficient method of entering and exiting the water to minimise the time hanging around and having nearby shelter/reheat facilities will all help mitigate the risks.

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Water Temperature

Both high and low water temperatures can put significant stress on swimmers putting their health at risk.

Cold Water

In cold water there is a common misconception that Hypothermia (when the core body temperature falls below 35°C from a normal near-constant of 36.5°C to 37.5°C) is the major risk. In reality the bigger risk to swimmers are effects of physiological changes that occur to the body prior to the onset of hypothermia:

Cold Shock
Swimmers can experience a cold shock response for about a minute after entering the water. Rapid skin cooling leads to a gasp reflex and possible hyperventilation. Panic can exacerbate the situation and potentially cause someone to drown by breathing water into the lungs if the head goes underwater or if the swimmer faints through prolonged hyperventilation.

Another cold shock response is that the blood vessels narrow (vasoconstriction) to preserve heat in the body core and protect the major organs. As a result the heart has to work much harder to pump the same volume of blood around the body. For swimmers with an underlying heart problem this additional workload can cause the heart to go into cardiac arrest.

Peripheral Cooling
Vasoconstriction, described above, decreases blood flow to the limbs. As a result the limbs begin to cool affecting the ability of the nerves and muscles to function as well which ultimately leads to a loss of controlled and coordinated movement and the ability for the swimmer to maintain an airway by keeping their head above water (known as swim failure).

Cold water tolerance in individuals varies depending on a number of factors including:

- Age
- Body physiology
- Health
- Ability to generate body heat.

Swimmers can improve their cold water tolerance by regularly swimming in cold water.

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Warm Water

Hyperthermia is an elevated body temperature which occurs when the body produces or absorbs more heat than it can dissipate, leading to heat stroke and unconsciousness.

Given the climate, problems associated with cold water swimming are generally perceived to be the more significant risk when swimming in the UK. However, the use of wetsuits can increase the risk of hyperthermia, particularly when the air temperature is warm and swimmers stand around for prolonged periods in zipped up wetsuits waiting to swim.

> **Wetsuits provide insulation against the cold, improving cold water tolerance and extending the time a swimmer is able to remain (comfortably) in the water. They also increase buoyancy so that, even when static, swimmers float. These two qualities can help reduce some risks to swimmers but it is important that wetsuits fit well and are designed for swimming, as poorly fitting wetsuits can impair swimming ability potentially creating other issues.**

To help mitigate the risks posed to swimmers by water temperature and weather conditions consider:

- **Acclimatisation:** encouraging swimmers to acclimatise to the water temperature by immersing themselves slowly and putting their faces in the water so they minimise the effects of cold shock, regulate their breathing and prepare their bodies for exertion in a controlled way.
- **Shelter:** providing a facility to provide shelter to swimmers pre and post swimming.
- **Announcements:** making regular announcements about either keeping sheltered and warm prior to swimming in cold conditions or keeping wetsuits unzipped and pulled down until just before entering the water and ensuring they stay well-hydrated in warm conditions.
- **Water:** providing water to keep swimmers hydrated particularly in warm conditions.
- **Swimmer Assessment:**
  – Having well-briefed safety personnel that are able to recognise the signs of a swimmer getting into difficulty.
  – Keeping an eye on swimmers after they have exited the water as they can continue to cool down particularly if the air temperature is low. (**NOTE:** This can be particularly important if the swimmer is following the swim with another activity such as cycling where impaired motor skills and manual dexterity can seriously affect safety).

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Safety Cover

There are a number of principles that underpin effective safety cover, including the ability to:

- maintain constant and proactive surveillance of all swimmers over the whole course (**NOTE:** Consideration should be given to the length of duty spells as fatigue compromises both concentration and performance. In difficult conditions e.g. cold, wet weather the duty spells may need to be shortened);

- guide and interact with swimmers, if necessary;

- raise the alarm and communicate with others;

- identify and respond quickly to a swimmer getting into difficulty and provide initial support to prevent the situation from worsening (as a guideline the initial support should aim to reach the swimmer within one minute);

- recover an unconscious casualty and transfer them to land-based support. The quicker this can happen the greater the probability of a successful outcome;

- maintain a designated swimming area and minimise the potential for interaction with other water users.

> **If the ability to provide effective safety cover as detailed in the Normal Operating Plan is compromised swimming should be cancelled or suspended until the conditions improve and/or appropriate resources are available e.g. mist or fog reducing visibility, safety boat breakdown**

Competencies

Anyone undertaking a safety role should be:

- Skilled and knowledgeable for the environment they are operating in;

- Physically fit to undertake their role and be able to self-rescue if necessary;

- Appropriately clothed and equipped, including food and drink, for the prevailing conditions;

- Able to use their equipment and the equipment available at the facility correctly and safely;

- Trained/briefed in the safety procedures applicable to their role; and

- Able to communicate for assistance.

It is essential that all operators of safety craft, whether powered or not, have an appropriate level of experience, are well briefed and drilled and mindful of how they approach swimmers. Being approached by powered craft in particular can be an intimidating experience for a swimmer.

Appendix 6 provides information about qualifications that indicate a level of technical competence appropriate to providing safety cover for open water swimming but further briefing and training may be required, particularly for anyone new to the sport.

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The safety of the swimmers (and the support team) must override all other considerations. As a minimum, arrangements should be put in place to ensure that:

• The safety cover is aware of and equipped to deal with any individual needs;

• The swimmer is able to access and exit the water safely with or without support;

• The swimmer is readily identifiable:

    a) in the event of an incident IF their particular needs may influence the safety response; or

    b) to highlight swimmers that may require support at the swim exit point.

• Any special medical support is available.

Different colour hats provide an easy and effective way of identifying athletes with differing degrees of disability in the water. A simple three colour hat system works well where:

• One colour is used to identify swimmers who require lifting out of the water;

• Another colour is used to identify swimmers who may require some basic help at the swim exit; and

• The final colour is used to identify visually impaired swimmers and their guides.

All safety and support staff should clearly understand what each colour represents.

Appendices

Appendix 1: Contacts

- Triathlon England (TE) – www.triathlonengland.org

- Amateur Swimming Association – www.swimming.org/asa

- British Canoe Union (BCU) – www.bcu.org.uk

- British Canoe Union Lifeguards (BCUL) – www.bculifeguards.org.uk

- Canal and River Trust (CRT) – www.canalrivertrust.org.uk

- Environment Agency (EA) – www.environment-agency.gov.uk

- Health and Safety Executive (HSE) – www.hse.gov.uk

- Maritime and Coastguard Agency (MCA) – www.dft.gov.uk/mca/

- Royal Life Saving Society UK (RLSS UK) – www.lifesavers.org.uk

- Royal National Lifeboat Institution (RNLI) – www.rnli.org

- Royal Society for the Prevention of Accidents (RoSPA) – www.rospa.com

- Royal Yachting Association (RYA) – www.rya.org.uk

- Sport England (SE) – www.sportengland.org/facilities-planning

- Surf Life Saving GB (SLSGB) – www.slsgb.org.uk

- Water UK – www.water.org.uk

Organisations involved with open water swimming competition

- British Long Distance Swimming Association (BLDSA) – www.bldsa.org.uk

- Channel Swimming Association (CSA) – www.channelswimmingassociation.com
  The CSA, is the official body established in 1927 to promote, regulate and support swimmers crossing the English Channel.

- Channel Swimming and Piloting Federation (CSPF) – www.cspf.co.uk
  The CSPF is a Governing body for English Channel Swimming recognised by both the British Maritime and Coastguard Agency (MCA) and the French coastguard.

- International Ice Swimming Association (IISA) – www.internationaliceswimming.com
  Ice swimming is swimming one mile in a water temperature of below 5°C following English Channel swim rules.

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Appendix 2: Further Reading

• ASA Guidance

• TE Guidance (including paratri)

• SLSGB/RoSPA Guidance

• Safety At inland Water Sites, produced by RoSPA

• HSE – 5 Step Approach To Risk Assessing

• National Water Safety Forum – Water Safety Principles

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Appendix 3: Water Quality

Blue-green Algae

The World Health Organisation (WHO) provides a series of guidance values for the protection of health from the presence of blue-green algae. The values are NOT species-specific but refer to the total number of blue-green algae cells per millilitre (cells/ml).

Three categories are defined – RELATIVELY LOW, MODERATE and HIGH. At "relatively low" levels (<20,000 cells/ml) adverse effects on health are considered unlikely. At the higher levels the potential impact on health is elevated. The "moderate" category is defined as >20,000 and <100,000 cells/ml (the level at which some species form scums).

WHO advises that swimming is discouraged at the "moderate" level and prohibited at the "high" (>100,000 cells/ml) level.

The Environment Agency (EA) also provides species-specific threshold values at which warnings should be given of possible bloom formation for species commonly found in the UK. The threshold values are similar to those defined under the WHO's "relatively low" level.

Whilst it is more practical to develop a management plan based on the generic WHO guidelines, the EA warning thresholds where available can provide an early warning of bloom formation.

The EA advice on bloom subsidence is that swimming can resume when two consecutive samples taken at weekly intervals are below the warning threshold.

Enterobacteria

Guidance levels at **bathing water sites** are set out under the EC Bathing Water Directives. The current directive 76/160/EEC is being superseded by the revised directive 2006/7/EC (**NOTE:** Full implementation by 2015).

It is very likely that many open water event locations are not designated as bathing water sites and therefore will not be subject to regular sampling and testing. The standards set out in the Directives do however provide a useful tool to assess water quality and organisers are advised to adopt them and plan accordingly.

76/160/EEC uses two parameters to assess the quality of bathing waters: total coliforms and faecal coliforms. Two standards are given – MANDATORY (which all bathing waters must comply with) and GUIDELINE (which bathing waters must endeavour to meet). The guideline values are set at a level of exposure at which no adverse health effects are expected and are based on the number of organisms present per 100ml of water sample.

Mandatory values are only given for total coliforms and faecal coliforms. Overall compliance for bathing water is based on 95% compliance (i.e. below the guideline value) of a certain number of samples over a full bathing season defined as 15th May to 30th September in England and 1st June to 15th September in Scotland. Therefore classification is determined retrospectively.

2006/7/EC, the revised Bathing Water Directive uses *E. coli* and intestinal entrococci as an indicator of faecal contamination. It sets much tighter standards than the original directive. The two previous classifications, mandatory and guideline, are replaced by four:

- **Excellent** – approximately twice as stringent as the current guideline standard.
- **Good** – similar to the guideline standard.
- **Sufficient** – approximately twice as stringent as the mandatory standard.
- **Poor** – failure to comply with the standards. Advise against bathing.

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A summary of the guideline limits under the EC Bathing Water Directives are illustrated in the table below:

	EC Bathing Water Directive 76/160/EEC		EC Bathing Water Directive 2006/7/EC			
	Guideline	Mandatory	Excellent	Good	Sufficient	Poor (Fail)
E.coli	<100[1]	<2,000[2]	<500[3]	<1,000[3]	<900	>900[4]
Intestinal enterococci	–	–	<200[3]	<400[3]	<330[4]	>330[4]

[1] 80% of samples to conform
[2] 95% of samples to conform
[3] Based on 95% percentile evaluation
[4] Based on 90% percentile evaluation

It is recommended that organisers engage United Kingdom Accreditation Service (UKAS) accredited companies to advise and undertake sampling/testing of water. UKAS is the only body recognised by the government to assess against internationally agreed standards. UKAS accreditation demonstrates competence, impartiality and performance capability.

Appendix 4: Risk Assessment

The table below highlights typical hazards that can be found at open water swim venues and suggests measures that can be put in place to mitigate the risks based on a simple traffic light system.

Each identified hazard is assessed as "red" (where the level of risk is unacceptable), "amber" (where the level of risk may be tolerable) or "green" (where the level of risk is acceptable).

Control measures are then applied with the aim of reducing the level of risk to the lowest reasonable level (within the green or amber shading) by applying appropriate control measures. If the risk posed by a hazard remains in the red shading, even with the application of control measures, the activity should NOT take place.

NOTE: The hazards identified and the example control measures to mitigate the risk are examples for guidance only and should NOT be considered as an exhaustive list.

Subject Area	Hazards/Effects	Who Affected	Current Risk (tick)			Control Measures (examples)	Residual Risk (tick)		
Site	**Access and Egress:** slips, trips, falls, abrasions and cuts, impact with bottom/ underwater hazards.	Swimmers				Site survey; clear debris, protective matting; clearly defined; landing assistant/ helper; medical support.			
	Spectator access: safe viewing, trips, slips, falls.	Spectators				Designated area; barriers, supervision and medical support.			
	Safety Team: Access and Egress – conflict with swimmers. Emergency access – recovery of casualty and hand over to emergency services.	Swimmers Safety Team				Designated launch point, cleared and safe; swimmers briefed on action to take if they get into difficulty; safety team briefed and casualty management rehearsed (to include land-based medical support).			
	Protection from elements: Cold and Heat.	Swimmers Safety Team				Shelter; catering facilities; re-warming (space blankets, towels).			
Water Quality and Features	**Entero-bacterial contamination.**	Swimmers Safety Team				Site tested (EC Bathing Water Directives 76/160/ EEC and 2006/7/EC), contingency in event of failed test(s). Swimmers and Safety Team briefed on simple safety precautions.			
	Blue-green Algae.	Swimmers Safety team				Site monitoring; water testing if "blooms" appear (WHO guidelines). Cancel activity or move to alternative site if high levels recorded.			
	Leptospirosis.	Swimmers Safety team				Swimmers and Safety Team briefed on simple safety precautions.			

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Subject Area	Hazards/Effects	Who Affected	Current Risk (tick)			Control Measures (examples)	Residual Risk (tick)		
Water Temperature	**Cold Water** Cold shock, Hypothermia.	Swimmers				Wetsuit mandatory swim. Maximum swim time. Warm drinks/space blankets to be available. Medical support.			
	Warm Water Hyperthermia.	Swimmers				Provision of water at start and finish. Briefing swimmers about conditions and need to keep hydrated. Medical support			
Waves and Currents	Compromised activity site, drowning hazard.	Swimmers Safety Team				Design course with advice from site operator/local knowledge; competitors briefing; clear course marking; check course prior to swimming. Positioning of safety cover.			
Underwater Features	Rocks, shallows, weed beds. Entrapment, impact hazard.	Swimmers Safety Team				Site survey; local advice; activity site away from obvious and known risks.			
Floating/ suspended Debris	Choking hazard, impact injury.	Swimmers				Visual site check; remove debris or move activity site.			
Overhead Obstructions	Tree branches, low bridges – impact hazard.	Swimmers Safety Team				Design course to avoid such hazards where possible; cut back foliage/trees if possible. If not use buoys/ropes and/or safety craft to guide swimmers away from hazard.			

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Subject Area	Hazards/Effects	Who Affected	Current Risk (tick)			Control Measures (examples)	Residual Risk (tick)		
Swimmers	**Ability/Inexperience:** Panic.	Swimmers Safety Team				Advice and training tips. Safety Team briefing.			
	Trauma/Injury	Swimmers Safety Team				Swimmers briefed on how to call for assistance. Safety cover briefed/trained and positioned to affect a swift recovery.			
	Visibility	Swimmers				All swimmers to wear brightly coloured swim hats, safety cover positioned to have clear sight and communication lines. Course designed with no "blind spots".			
	Loss of swimmer	Swimmers				Registration of swimmers, briefing re action to take if withdrawing, head count when entering the water and again when leaving.			
	Overcrowding Impact injuries and/or panic. Ability of safety team to affect a rescue.	Swimmers Safety Team				Wave starts with limited numbers - sufficient time gaps between waves to minimise potential for waves to meet. Course design to include long straight swims prior to turns to allow swimmers to naturally separate based upon speed/ability. Swimmer briefing to advise weaker swimmers/inexperienced to start towards the back of a wave.			
Swim Course	**Poor Design:** Ability to navigate easily and safely.	Swimmers				Use brightly coloured buoys which sit high enough in the water (1-1.5 metres) to be seen at water level. Use of lane/guide ropes between buoys on straight out and back courses. Use of lead canoeists. Course design simple so that swimmers always keep buoys on the same side			
	Moving Buoys: Impact of currents/waves/prevailing wind.	Swimmers				Test anchoring system prior to swim in different conditions			
	Emergency Access: Rapid and safe access for safety team to affect a rescue.	Swimmers Safety Team				Course design to consider safety cover provisioning around the course to effect easy access to swimmers in difficulty. Designated landing point. Rehearsal of emergency action plan in the event of having to recover and land a casualty.			

Subject Area	Hazards/Effects	Who Affected	Current Risk (tick)			Control Measures (examples)	Residual Risk (tick)		
Climate and Weather	**Sun glare:** Visibility for sighting, sunburn.	Swimmers Safety Team				Course design to take into account time of year, time of event, positioning of sun in the sky. Briefing re-use of sun block.			
	Electrical Storms: Electrocution.	Swimmers Safety Team Officials				Check the weather forecast, visual check, cancel swim if an electrical storm approaches, emergency evacuation plan, swimmer briefing.			
	Winds/Swell/Waves: Visibility and hearing.	Swimmers Safety Team				Cancel swim in the event of swell/waves which can affect the ability to observe swimmers, increase the risk of moving buoys and create difficult conditions for safety craft to access groups of swimmers to recover casualties.			
	Mist/Fog: Visibility.	Swimmers Safety Team				Delay start until fog/ mist lifts. Reduce swim distance/amend course so that the whole course can be clearly seen.			
Conflict with other users	**Boats, PWC's, Anglers, Bird Watchers:** Various conflict/impact injuries.	Swimmers Safety Team				Liaise with other users, establish clear activity zones, agree activity timetable.			
Safety Craft	**Casualty recovery:** Impact trauma.	Swimmers Safety Team				Appropriate craft and numbers related to activity. Ensure Safety Team is qualified/experienced with rescue craft, rehearse emergency action. Additional support from land-based spotters.			
	Communication: Ability to communicate over distance.	Safety Team				Communications plan, radio, hand signals, sight lines etc.			

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Appendix 5: Safety Craft

Powered Craft

When sourcing suitable powered craft aim to find boats that will:

- Have room for at least three people (i.e. driver, crewman/rescuer/lifeguard, casualty) and be able to get to the evacuation point as quickly as possible even when the passengers are not ideally positioned;
- Have sufficient engine size to be able to plane with at least three people on board;
- Be safe to manoeuvre close to swimmers; and
- Have sufficient working space.

Some of the more common types of powered craft are described below

Type Of Craft	Advantages	Disadvantages	Most Appropriate For
Rigid Inflatable Boat (RIB) with console	Fast, comfortable and manoeuvrable.	Restricted working space can be challenging for team working. Large tubes – can be difficult to extract larger casualties into boat.	Lake, reservoir, flat water, rivers, coastal.
Small, rigid safety boat	Easy to drive, manoeuvrable, good working space. Good course set up boat.	Uncomfortable, slow with three people, hard sides so can be uncomfortable for casualty extraction (risk of injury if not done correctly).	Lake, reservoir, flat water.
Tiller Steer Inflatable/Inshore Rescue Boat (IRB)	Fast, Manoeuvrable, large working space, quick onto the plane. Good for comfortable and safe casualty extraction.	Often two-stroke and smokey. Can be difficult to source.	Lake, reservoir, flat water, rivers, coastal/surf.
Dory/Cathedral Hull	Good working space – with thwarts (bench seats) removed.	Hard sides, poor slow speed manoeuvrability, bumpy ride in chop. Risk of further injury in unconscious casualty recovery.	Lake, reservoir, flat water.
Drop Down Bow	Ease of recovery, good working space. Good course set up boat.	Potential delay while closing bow, often under powered, manoeuvrability.	Lake, reservoir, flat water, rivers.
Rescue Ski	Speed, dedicated sled, can be a fast and effective way to recover casualties if double crewed.	Poor low speed manoeuvrability. Inability to provide any meaningful/effective treatment on back of sled. Can be more difficult to extract a casualty onto land from the sled as it sinks a little when not moving.	Rivers, coastal.

Other Considerations

Drivers

All boat drivers should have an appropriate level of experience; are well briefed and drilled and able to approach swimmers in a safe and controlled manner (being approached by a powerboat is an intimidating experience, and it is important that the driver is able to allay much of the swimmers anxiety as possible).

The minimum recommended qualification is the RYA Powerboat 2, RLSS UK Helm Award or SLSGB IRB/ISB Driver Award.

Additional Equipment Images?

- A **prop guard** is a protective cover fitted around the propeller to either protect the propeller or protect people from being struck by the propeller. It reduces both the risk and the severity of injury. Regardless of whether a prop guard is fitted or not it is recommended that drivers always follow good practice by cutting the engine completely when approaching a person in the water and wearing a killcord at all times where fitted.
- A **Jacobs Cradle ("Fat Mat")** is a buoyant mat that can be rolled out from a boat to assist with the recovery of casualties (particularly larger casualties).
- A **Rescue Tube** is a buoyant tube (able to support the weight of a casualty) on a long leash that can be worn around the rescuers body and used to tow the casualty to safety.

Paddle Craft

Some of the more common types of paddle craft are described below.

Type Of Craft	Advantages	Disadvantages	Other
Racing Kayak	Can move very fast, providing the paddler is competent.	Unable to provide any support to swimmers without capsizing. Very unstable and un-manoeuvrable.	NOT suitable for providing safety cover.
Playboat	Generally bright in colour – high visibility.	Generally uncomfortable for paddlers for any prolonged period of time. Unable to provide support to swimmers without the front/back of the boat submerging underwater. Slow and difficult to paddle efficiently over any real distance.	Not recommended that these are used by safety kayakers.
Open Boat	Large boat, easy for swimmers to see. Option to get a swimmer into the boat if required.	Difficult to control in windy conditions/large swells. Paddler needs to be very competent to be able to safely navigate near swimmers without causing injury. Better paddled as a duo.	Widely available, but not the most effective safety craft.

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Type Of Craft	Advantages	Disadvantages	Other
Sit-on-top Kayak **NOTE: Ocean skis and surf skis provide a similar function.**	Widely available. Generally easy to paddle, even for less experienced paddlers. High visibility and easy for paddler to provide support to swimmer if required (low to water).	Paddler can be very cold and uncomfortable (generally little or no back support*) if on-duty for a prolonged period of time. *back supports can be fitted.	Relatively new to the canoe/kayak market and widely available as they are cheaper than usual kayaks.
Stand Up Paddleboard 	Good visibility of swimmers. Can travel fast once on the move. Easy to provide support to swimmers if required as board is low to the water.	Difficult to paddle/control in poor weather conditions – even in moderate wind. Can become tiring for paddler if on-duty for prolonged period of time. Paddler needs to be competent to navigate in close proximity to swimmers to avoid injury.	Relatively new to the canoe/kayak market and widely available as they are cheaper than usual kayaks.
Sea Kayak 	Good stable boat to operate from. Comfortable for the paddler if on-duty for an extended period of time. Normally very visible (bright colours).	Generally larger and less manoeuvrable.	Normally paddled by more experienced paddlers as generally quite expensive.
General Purpose Kayak 	Good stable boat to operate from. Comfortable for the paddler if on-duty for an extended period of time. Normally very visible (bright colours) and easily accessible. Most clubs and centres have access to these type of boats.	Not as rescue orientated as dedicated models, but a very close second.	The most commonly found kayak available. Many river/club paddlers will have this type of boat, which are good for use at swimming events.
Specialist (Lifeguard) Rescue Boat 	Dominant red and yellow colour scheme. Very stable with the ability to rescue a numbers of swimmers at one time.	Large turning circle.	Expensive to buy and so will only be bought by dedicated Lifeguard clubs.
Rescue Board 	Can get close to swimmers easily, without potential to cause injury (with paddles etc.). Good to provide support to swimmers if required (low to the water). Designated support straps. Can be knelt on to gain better visibility/ vantage point.	Paddler can be very cold and uncomfortable if on-duty for a prolonged period of time.	Generally found on beaches or at coastal clubs (or used by beach Lifeguards) where they are more useful as they are not affected by wind as much as other paddle craft.

Qualifications

- **BCU 1, 2 or 3 Star:** These awards are personal competence awards, which demonstrate the paddler's ability to control their boat and perform a number of basic manoeuvres. Paddlers holding 2 Star and above should be able to safely manoeuvre in and around swimmers, if required.

- **Foundation Safety and Rescue (FS&R):** This is a foundation safety/rescue award for paddlers wishing to become Canoeing Coaches. Whilst the course covers elements of safety and rescue, this is solely aimed at performing those skills on other canoeists rather than swimmers. Paddlers are required to be of 2 Star standard before being able to attempt this award.

- **Canoe Safety Test (CST):** This award has been superseded by the FS&R (but is still a valid award) and covers the same content of the FS&R.

- **Swim Event Safety Award (SESA):** This is a new award recently launched by the BCU Lifeguards with specific skills, training and rescue techniques to deal with open water swimmers.

- **SLSGB Rescue Board Paddler:** Establish a level of competence to provide a supporting water safety function to a water safety team as a rescue board paddler.

- **SLSGB Rescue Tube Swimmer:** Provides the essential water safety competencies required for acting as a water-based spotter and support on a rescue or paddle board. Able to self rescue, recognise swimmers in trouble, support and rescue them to further medical support or transport, communicate using recognised methods, perform surface dives and EAV for an unconscious casualty.

The above qualifications are not a fully exhaustive list and there are others that may be equivalent.

Appendix 6: Lifeguard and Spotter Support

Lifeguard Qualifications

Qualification	Description	Summary
Beach Lifeguard	This is the only Lifeguard Award specifically designed to supervise non-programmed activities in open water settings. Candidates are capable of rescue from a variety of craft and administering initial first aid including Cardiopulmonary Resuscitation (CPR).	Ideal for open water swims.
Surf Lifeguard	Provides the knowledge and skills required in order to provide professional patrolling and water services, in surf conditions, with rescue skills and advanced fitness requirements.	
Surf Life Saver	Provides lifesaving skills when providing safety cover as part of a wider water safety team or when working in close proximity of participants, such as when working as a coach delivering a session in the sea or a volunteer environment.	
RLSS UK Emergency Response Activity Supervisor and Level 3 Water Safety Management Programme	These awards are aimed at providing safety cover for open water programmed activities, covering rescue and basic first aid, including CPR.	Ideal for open water swims.
Pool Lifeguard	Pool lifeguards are trained to supervise activities in the indoor swimming environment. Pool Lifeguards in the outdoor environment will need additional training to orientate them to the venue, the conditions, equipment and operating procedure.	Pool lifeguards are readily available but require additional training.
RLSS UK Life Support 3	Life Support 3 is the vocational level training in First Aid and CPR. Where people have Life Support 3 they are qualified to deliver basic first aid and CPR. Where candidates have open water experience they can be used to support the safety function.	There may be additional First Aid awards that are equally suitable.

The above qualifications are not a fully exhaustive list and there are others that may be equivalent.

Spotters

Land-based spotters can provide useful support to the safety team, increasing the level of surveillance around the swim course. They do not need to be qualified but should be briefed to:

- Recognise swimmers that are getting into difficulty;
- Know how to raise the alarm; and
- Understand and appreciate the environment and the extent of their responsibility.

They should also be able to use any equipment provided. This may include communication equipment (e.g. radio, whistle) and rescue equipment (e.g. throw bag).

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Appendix 7: Swim Entry and Group Size

Mass Starts

Dive starts are normally only advisable for small groups of swimmers who have racing dive experience and where:

- The water depth is a minimum of 1.8 metres deep;
- The dive area has been thoroughly checked for underwater hazards; and
- There is a stable structure to dive from.

For the majority of group swims the best options are either in-water or land based starts.

Type Of Start	Advantages	Disadvantages
Deep Water	• Reduced risk of tripping/slipping or cut feet when rushing to enter the water. • All swimmers have the opportunity to acclimatise to the water temperature.	• More difficult to give instructions to swimmers in the water due to hearing and vision difficulties. • Time taken to get swimmers lined up can lead to some swimmers getting cold. • Requires more space. • Not advisable for water affected by currents/tides.
In Water (knee to waist deep)	Similar to deep water plus: • More easy to manage/instruct swimmers.	
Land Based Start	• More easy to manage/instruct swimmers. • Can control the flow of swimmers into the water by restricting the size of the start line. • Weaker/nervous swimmers can "hang back".	• Can create tripping/slipping hazards if not carefully managed. • Does not require all swimmers to acclimatise to water temperature prior to entering the water. • There is a potential for swimmers at the rear to surge forward to try and get a better start.

Swim Waves

Swim Waves, where swimmers are set off in groups at intervals, provide a more flexible approach to managing mass participation swims.

The main benefits of a wave start are the ability to:

- accommodate a greater number of swimmers; and
- manage the number of swimmers entering the water any one time, reducing the risk of overcrowding and enabling the safety team to reach swimmers more easily.

Wave Size

Choosing an appropriate wave size depends on a number of factors including:

- The type of swim start; dive, land-based, deep water (see above);
- Whether swimmers are wearing wetsuits or not – the risks associated with non-wetsuit swimmers are greater than for wetsuit swimmers so smaller wave sizes should be considered to assist safe supervision;
- The ability/experience of the swimmers;
- The available space at the start and the width of the course; and
- The straight line distance to the first turn allowing the group of swimmers to spread out.

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Wave Gap

The time gap between waves should reflect the swim distance and the ability of the swimmers in each wave with the aim of minimising the potential for the fast swimmers at the front of a wave to catch the slower swimmers at the rear of the preceding wave. In the event of a multi-lap course it is also important to avoid setting a wave off at the same time as a previous wave is passing the vicinity of the start.

NOTE: For some longer distance linear swims, often held in rivers, it may be preferable to arrange waves so that slower swims go off in the first wave(s) and the faster swimmers go off in the last wave(s). This has the effect of reducing the spread of the field making it easier for the safety team to supervise the swimmers, but be aware that if you are organising a triathlon event this could cause bunching on the bike section.

Wave Differentiation

The ability to differentiate between waves is important as it helps manage the swimmers on land (ensuring they are in the correct wave), identify the progress of the wave and monitor how long swimmers have been in the water. The simplest way of achieving this is to issue each wave with a different colour swim hat.

Non Wave Starts

For training sessions it is not uncommon for swimmers to enter and exit the water at different times individually or in small groups so wave size is not applicable. In these circumstances it is more appropriate to have a maximum number of swimmers in the water at any one time (with a system to monitor numbers on an ongoing basis) appropriate to the safety support available.

Appendix 8: Open Water Swimming Venue Considerations

Area	Suggested requirements	Recommended requirements	Comments
THEME: Welcoming Environment			
Web-based publicity	Good quality web-based information providing information on facilities, session times, access arrangements as well as directions to the venue and travel options (including public transport links).	Downloadable information e.g. registration forms.	
Arriving at the site	Signage to the venue visible from the public highway. Wayfinding signage as you arrive at the site. Suitable off-road car parking for up to 50 cars and bike storage area for up to ten bikes.	Parking for up to 50 cars. Three designated accessible spaces. One space allocated for mini-bus. Secure/lockable bike storage for five bikes.	Based on typical swimming session of 50-100 swimmers.
Signage	Welcome/Display board providing information about the club, sessions, how to join in, what to wear, who to contact.	Clear prohibition, hazard and mandatory signage to advise and inform visitors. See ROSPA information http://www.rospa.com/leisuresafety/adviceandinformation/watersafety/ http://www.rospa.com/leisuresafety/adviceandinformation/watersafety/water-safety-signs.aspx	
Registering	Covered area to register swimmers/record details/take payment.	Secure registration/reception point.	
Changing Facilities	Separate provision for male and female changing either in built facility or marquees. Bag/valuable storage facility.	One change space per participant (small locker for small personal items, hanging space and shelf – 400mm per person.	Typical gender ratio: 70% male: 30% female (therefore on session of 50 swimmers provision would be based on 35 males and 15 females).
Shower provision		One shower per four to ten participants.	Where showers are not available clear guidance and recommendations on washing prior to eating and cleaning swimming kit in fresh water prior to next use.
Toilet provision	One toilet per 20 participants.	One toilet per ten participants. Accessible toilet.	

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Area	Suggested requirements	Recommended requirements	Comments
Access for emergency vehicles		Emergency contact information. Way-marked route and pathways to meeting point and point of access. Clearly marked access for emergency vehicles.	
THEME: Safe Environment			
Assessing Conditions	Prevailing conditions assessed in relation to suitability for swimming and for ability to maintain effective supervision e.g. water and air temperature, wind speed, visibility (e.g. fog, heavy rain).	Site specific weather station.	Equipment to consider: • Electronic/probe thermometer. • Anemometer.
Entry and exit from the water	Clearly identified and checked area(s) for easy entry and exit from the water whether via beach/bank, slipway, pontoon or steps.	Six metre wide 'Wade-in' beach or slipway. Maximum Slope 1 in 20. No sudden depth changes.	Handrails and/or guide ropes can provide assistance. Other equipment to consider: • Non-slip matting; • Flying banner(s) to mark entry/exit point(s); • Lane lines to define specific areas (e.g. warm up).
Configuration and course markings	Simple course design that is well-marked and easy to follow.	Brightly coloured swim buoys that sit a minimum of 1 metre above the water and that are positioned no more than 200 metre apart.	Equipment to consider: • Electric blower (land use); • Petrol blower (on water use); • Weights: sufficient to prevent movement in the prevailing conditions; • GPS; • Rope; • Small equipment box for course laying (e.g. cable ties/gaffer tape/scissors/snips/insulation tape).
THEME: Well equipped			
Safe supervision	Appropriate numbers/type of powered craft, paddle craft, lifeguards/spotters based on an activity specific risk assessment.		Equipment to consider: • Radios; • Whistles; • Binoculars; • Throw bags.
First Aid	On-site First Aid. Emergency contact information. Way-marked route and pathways to meeting point and point of access. Clearly marked access for emergency vehicles.	First Aid area with medical cot, hot and cold running water and separate toilet provision.	Equipment to consider: • First Aid kit; • Towels; • Safety scissors; • Space blankets.
THEME: Well organised			
Registering	Covered area to register swimmers/record details/take payment.	Secure registration/reception point.	

Area	Suggested requirements	Recommended requirements	Comments
Briefing	Briefing area with good view of the swim course.		A whiteboard/magnetic board can be a useful tool to help describe swim course.
Checking in and out of the water	A check-in/out system to be able to: a) Identify the number of swimmers in the water at any time. b) Ensure that the level of safety cover is appropriate to the number of swimmers in the water.		Consider a manual system (e.g. band board) or electronic transponder ("chip") system.
Storage and transport	Suitable means of transporting and storing equipment including: • Safety craft and associated equipment. • Buoys and associated equipment. • Temporary infrastructure e.g. marquees. • Hire wetsuits.	Dedicated secure storage facility.	

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