

*lifesaving*

## Water Exam Theory Handout

### Lifesaving Questions

Answer 4 to 8 questions on lifesaving showing a clear understanding of the following areas:

- Water safety
- Survival in water
- Rescue principles

### Drowning chain

Drownings and accidents in and around water follow a general pattern which can be best described as a chain of linked events. The concept of a chain suggests that where one or more of these links are broken an aquatic accident is likely.

Lack of education -> lack of safety advice -> lack of protection -> lack of supervision -> inability to cope



About 500 people drown each year in British waters.

### Location of drownings

- 2% garden pond
- 3% other indoor
- 4% other outdoor
- 4% swimming pools
- 5% dock
- 6% lakes and reservoirs
- 8% bath
- 8% canal
- 20% sea
- 40% rivers and streams

In all age groups, male drownings dominate the statistics. There is a peak among active males aged 15 - 34. Alcohol is a contributory factor in many drowning cases every year.

### **Water Safety Code**

1. Spot the dangers
2. Take advice
3. Don't go it alone
4. Learn how to help

### **Safety in the home**

Many drownings occur at home, often because familiar surroundings are expected to be safe. Washing machines, paddling pools, water butts, basins and baths are all potential hazards to a small child. Children should be supervised at all times.

- Fence in private swimming pools and use a pool cover
- Cover water butts
- Cover fish ponds with wire secured at the edges
- Empty paddling pools, baths and buckets after use
- Keep bath plugs away from small children
- Keep young children away from washing machines

### **Safety in open water**

- Go together
- Avoid dangerous areas
- Know what to do in an emergency

### **Weil's Disease**

Rivers, ponds and canals are sometimes infected with a bacterium which can cause Weil's disease. This usually takes the form of a chill and may resemble an attack of flu. It can be a serious illness requiring hospital treatment. If you fall ill after swimming, particularly within three weeks, see your doctor and ask for a blood test for Weil's disease.

### **Safety in the sea**

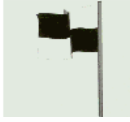
- Swim parallel to and not away from the shore
- Swim diagonally across the current to safety, as struggling against it can be exhausting
- Remember that cold water affects stamina
- Keep dinghies on a fixed line
- Pay attention to the flags (see below) and swim in areas with lifeguards

### **Flares**

- Red - emergency (esp. at night), used to signal for help and to identify your position
- Orange - day time emergency, used to signal for help and identify your position
- White - collision warning at night, or to illuminate an area



## Flags



Black chequered - Surfing, no swimming



Red over yellow - lifeguards patrol between these 2 flags

- Yellow - Caution take care
- Green - Calm water - take care
- Red - Danger, No swimming

## Distress Signals

- Flares (see above)
- 6 blasts on a whistle, at one minute intervals
- Waving a raised oar
- Waving an arm when in the water

## Emergency Services

There are six emergency services:



Ambulance



Fire



Police



Cave rescue



Mountain rescue



Coastguard

## To make an emergency call:

Dial 999 or 112, tell the operator which service you want, wait for the emergency services to answer, give the address or place help is needed. Give any other necessary information. State what has happened, the number of people involved, the condition of the casualties. Give them your name.

## Rip tides

These are fast flowing runback currents which are very dangerous for swimmers in the sea. Look for: discoloured water that is brown in colour due to sand stirred at the bottom; foam on the surface which extends beyond the breaking waves; debris floating with the current; large waves breaking further out on both sides of the rip.

*Survival:* Swim out of the rip by keeping parallel to the shore, returning through the breaking waves. Will commonly form between groynes in medium to heavy seas.



## Hypothermia

The normal core body temperature of a human is about 36.9° C. Hypothermia occurs when this area (particularly the heart, lungs and brain) drops below 35° C. This can be caused by sudden immersion in cold water or if the body's heat production is impaired by exhaustion or injury.

*Treatment:* You should lay the casualty down in a sheltered position and cover to prevent further heat loss. Lying next to the casualty and using your body warmth is beneficial. A conscious casualty who is shivering and uninjured may be immersed to the neck in a warm bath of about 40° C (which will feel comfortable to the elbow). Heavy outer clothing should be removed before immersion. The casualty should stay in the bath until they feel comfortably warm, but they should be removed if they complain of feeling hot or sweating. Urgent removal to hospital is a priority.

## Survival principles

In a survival situation, you need to develop an emergency plan to help you cope with the situation. This will be based on five main elements:

- An assessment of the situation
- action based on this initial assessment
- reassessment after the initial action
- planning a follow-up
- evaluating success

You will need to consider the temperature of the water, the distance from the shore, what help is available, weather and water conditions, estimated survival time, clothing worn and the availability of buoyancy aids.

If on your own, use the H.E.L.P (Heat Escape Lessening Posture), float or scull in a relaxed manner and hold onto a buoyancy aid. To adopt the H.E.L.P position, keep your legs straight and together pointing them at an angle in front of you, press your arms against your upper body (gripping a buoyancy aid) and keep your head out of the water.

If in a group and you are wearing life jackets, use the HUDDLE position. You should press the sides of your chests together, press your groins and lower bodies together and put your arms round each others' backs at waist level.

## Rescue Principles

All rescues involve use of initiative and judgement. There are four main categories of drowning casualty. They should be rescued in this order:

1. non-swimmer
2. weak swimmer
3. injured
4. unconscious

The safety of the rescuer is the most important consideration - rescues that can be performed without entering the water are the safest. This rescue sequence should be followed:

**Shout ⇒ Signal ⇒ Reach ⇒ Throw ⇒ Wade ⇒ Row ⇒ Swim with an aid  
⇒ Swim and tow**



## Entries and exits

- *Slide in entry* - use when the depth and the underwater conditions are unknown. The movement should be controlled and safe.
- *Step in* - use when the water is clear, the depth is known and you can see that the bottom is free from obstacles.
- *Compact jump* - a feet first jump that should be used when you need to enter deep water from a height of more than one meter.
- *Straddle jump* - for entry to deep clear water from a low height, when you need to keep your head up.
- *Shallow dive* - for when the water is clear, the bottom can be seen and the depth is known.

## Picking up a casualty

Swim cautiously towards the casualty, calm and reassure them. Adopt the defensive stand-off position at least 3 meters away from the casualty.

Select a suitable tow and explain to the casualty what you are going to do. Swim slowly around them in a wide arc. Maintaining a safe distance until you are ready to move in behind them. Tow the casualty slowly and reassure, encourage them to help you by kicking or sculling. Observe both the casualty and the direction of travel.

## If a casualty struggles or tries to grasp you when towing

- Let go of the casualty immediately
- Reverse away and adopt a defensive stand off position
- Calm and reassure the casualty
- Move slowly behind the casualty
- Resume the tow when it is safe using an appropriate tow for an unco-operative casualty (e.g. under arm or cross chest tow)

## If they continue

As above only change tow and support the casualty until help arrives.

## **Supplementary Theory for Award of Merit**

### **Breaking the drowning chain**

A knowledge of water safety can help to reduce the likelihood of a water accident, ways to achieve this are:

- Educating people on how to recognize and avoid dangerous situations.
- Denying and restricting open access to water hazards.
- Providing information leaflets and signs.
- Ensuring those who supervise are suitable trained and competent.
- Acquiring competent swimming and personal survival and rescue skills.
- Making rescuers and rescue equipment readily available.

### **Water Safety Guidelines**

- Knowing that each water location (sea, river, lake) has its own particular hazards.
- Knowing how to behave when in, on or near water, thus helping to prevent accidents.
- Being able to swim well
- Learning survival principles
- Being able to help others in difficulty
- Being aware of potential hazards around the home.

### **Inland Water Safety**

- avoid parking or driving cars near the water's edge
- keep children under careful supervision
- carry a lifeline
- stay away from gravel pits
- take care when near flooded foundations and excavations on building sites
- keep away from locks unless you are in a boat
- keep away from farm slurry pits
- remember to tell someone where you are going and when you will return

### **Personal Survival**

Only swim when absolutely necessary, it is essential to conserve heat and body energy.

- Think positively
- Keep calm
- Make a plan
- Stay afloat
- Hold onto a buoyant aid
- Keep body and limbs submerged
- Retain clothing
- Swim slowly if you have to move
- Change position or stroke regularly to lessen muscle fatigue
- Keep your eyes open
- Breathe regularly in a controlled manner



## **Group survival**

- Appoint a leader
- Keep together
- Supervise weaker swimmers
- Use survival and buoyancy aids
- HUDDLE position
- Encourage one another

## **Effects of hypothermia**

When exposed to cold conditions the body reacts in the following ways as its core temperature decreases.

### **37°C to 35°C**

Shivering becomes intense and uncontrollable.  
Ability to form complex tasks is impaired.

### **35°C to 33°C**

Violent shivering.  
Difficulty in speaking.

### **33°C to 30°C**

Shivering decreases and is replaced by muscular rigidity.  
Muscle co-ordination is affected producing erratic or jerky movements.  
Casualty remains coherent.  
Casualty may be confused.

### **30°C to 27°C**

Unconsciousness  
No response to spoken word  
Reflexes cease to function  
Heartbeat becomes erratic

### **Below 27°C**

Failure of cardiac and respiratory centers in the brain  
Death

## **Situations**

*Underwater weeds* - avoid sudden movements and scull out, or swim very gently with long, slow breast stroke or side stroke with minimum leg movements.

*Weirs* - tuck your body up into a ball and get to the bottom.

*Quicksand and deep mud* - don't try to stand up, spread your weight by lying flat and use slow arm and leg movements.

*Ice* - call for help; spread your arms across the surface; try and slide onto the ice; if the ice breaks, move towards the side breaking it as you go.



## Escape from a Car in Water

When a car enters the water it may settle on the surface for a short time. Every attempt should be made to get out at this point through the side windows. The car will sink engine first, after the car hits the water the following should be attempted:

- Unfasten your seatbelt.
- Switch on all interior lights and exterior lights so that the occupants can see and be seen.
- Unlock any doors.
- Close all the windows/sunroof.
- Move to the opposite end of the car to the engine.
- Take a breath before the car submerges.
- When the water reaches your chin the pressure inside and outside the car will have equalized, take a deep breath and force the door open, if this fails, wind the window down and the door should open or kick out the windscreen from the corner.
- If there are several people in the car, link hands and form a human chain, the most competent lifesaver should go last.
- Occupants should exhale as they rise to reduce pressure on the ears.