

## Water operations

### Official

## Hazards and risks

The hazards listed below are specific to water operations, or are generic hazards for working in, on or near water. The list is not exhaustive, and ICs should always be aware of additional hazards when formulating their objectives and plan:

### Working in, on or near water

- At an incident, personnel may be required to conduct operational activity near to bodies of water, including lakes, reservoirs, ponds, quarries, streams and swimming pools. There is the possibility of personnel entering the water leading to risk of submersion, entanglement, cold water shock, hypothermia and ultimately drowning.
- In a moving body of water, hazardous debris and materials including large objects can affect personnel or compromise safe systems of work. Harmful substances such as sewage and industrial chemicals can be washed downstream and into the incident area. (Debris may be on the surface, suspended in the water or rolling along the bottom.)
- Hydrology – IC's must be aware of the presenting hydrology such as: - recirculation, eddies, tidal waters, obstructions – pins, strainers, siphons etc.
- Biological hazards – IC's must implement strict safety precautions such as no drinking, eating or smoking until decontamination procedures have been followed, hazards include water borne contaminants such as blue/green algae, veils disease and leptospirosis.
- Clean line principle - fixed lines can pull responders underneath the water and untreated lines may sink and snag on sub-surface objects when saturated. Any fixed line may hold a responder or casualty in a hazardous position.

### Weather

- Personnel working for extended periods in dry suits can become hypo or hyper thermic due to the material and construction of dry suits.
- Exposure to inclement weather conditions or immersion in water following may affect the judgement and dexterity of operators, onset of hypothermia or other climatic injuries.
- Forecast weather conditions should be obtained and monitored as they can have a negative effect on operations and the health and safety of personnel.

### Sub-surface rescue

- The risk associated with sub-surface rescue are too high because it involves hazards which go beyond the capability of LFB safe working procedures, breathing apparatus and PPE.

- As a result, firefighters **MUST NOT** attempt rescues which involve them placing their head under the surface of the water.
- London Fire Brigade breathing apparatus **MUST NOT** be used under water as the equipment is not designed for this task.

## Control measures

- All personnel must be aware of their responsibilities regarding working in, on or near water and maintain a full understanding of the water operations capability.
- Water operations level 1 and 2 are, when used appropriately, safe systems of work and are considered a control measure in both the dynamic and analytical risk assessment process.
- When working inside an area of risk, a DRA must be conducted by the water operations team leader on behalf of the incident commander. Any other hazards should be considered when conducting the DRA. Only on the agreement of the IC may personnel enter the risk area.
- Decontamination:
  - Use the Alco gel supplied on pump ladders and FRUs to disinfect hands.
  - Always wash your hands with soap and water before eating, drinking or smoking.
  - Any firefighter who suffers cuts, scratches or abrasions of the skin should wash them thoroughly as soon as possible.
  - All personnel who have entered open water must shower as soon as possible after the incident.

## SOPs

- Water operations are divided into the following 3 levels of response:
  - **Level 1 water operations** – operations where firefighters work within 3m of an unprotected water's edge or enter water that is both shallow enough not to compromise their PPE and slow moving enough that there is no foreseeable risk that they will be swept off their feet.  
**If the IC is in any doubt level 2 water operations must be implemented.**
  - **Level 2 water operations** – operations where firefighters may have to commit to water (still or moving) to affect a rescue. This includes all incidents involving people in the water and any other incidents beyond the limitations of level 1.

Before a firefighter enters the water to affect a rescue the incident must be escalated to level 2 water operations and the following control measures must be in place:

- A firefighter who is considered competent and capable of performing the rescue should be identified by the IC.
- All personnel must be fully briefed.
- A **floating safety line supervisor** must be in place.
- Anyone entering the water must be **rigged correctly**
- Consider using **inflated fire hose** to provide additional buoyancy for the casualty and the rescuer.
- **Effective communications** must be established and maintained between the IC, the rescuer and all safety personnel.

- Keep noise to a minimum around the area of operations to facilitate **clear verbal communications** e.g., switch off appliance engines if parked close by.
- Personnel to **enter the water slowly** to minimise cold water shock and reduce the chance of injury. Any immersion in cold water can compromise even good swimmers almost immediately.
- **Gauge the depth of the water** before entering and if necessary, take a ceiling hook or other piece of equipment to regularly gauge the water depth.
- The floating safety line supervisor is to **monitor the rescuer** for signs of distress and if they appear in distress or become unresponsive to withdraw rescuer immediately.
- Any firefighter committed to the water should be **replaced by FRU SRT** as soon as practicable.

### **Emergency rescue boat operations (ERB)**

The following points should be followed when using the ERB:

- Powered ERB must be crewed by a minimum of two FRU water rescue technicians, including one trained powerboat handler when carrying out a rescue.
- The ERB has a maximum capacity of 7 people (650kg), which includes rescuers and equipment.
- The emergency cut out lanyard (kill cord) is always attached from the coxswain to the engine of the ERB during boat operations.
- The all-round white navigation light must be used at night or during poor visibility.



This Standard Operating Procedure should be read with:  
PN979 – Rescue - NOG: Dated 1 March 2022