



Industrial working on or near water

Learning outcomes and key teaching points



About Rescue 3 Europe

Rescue 3 Europe develops state of the art technical rescue courses, providing internationally recognised accreditation for organisations and individuals operating in high risk environments.

As an international accrediting body, Rescue 3 provide up to date best practice guidance that is constantly evolving in line with new research and testing. All changes and developments of Rescue 3 courses go through a process of peer review and oversight by a steering committee made up of industry experts from all over the world.

Rescue 3 training providers deliver courses worldwide, in multiple disciplines, including: rope, water, boat, ice and confined space rescue. Our large suite of courses have been adopted by mountain rescue teams, wind turbine operators, fire and rescue services, ambulance teams, utilities providers, and military personnel.

Within each discipline, Rescue 3 accredited courses cover every level of operations, whether this is at an awareness level, avoiding risks and applying simple safe systems of work; or at more advanced levels where practitioners must acquire high levels of personal skills and understanding to access and navigate difficult environments.

For over four decades Rescue 3 has provided the standard for technical rescue training, offering guidance and support for maintaining best practice.





The course learning outcomes are provided as pre- and post-course reference for people involved in the delivery of Rescue 3 courses (eg Rescue 3 training providers, instructors and students). They are not to be used for any other purpose without the express written permission of Rescue 3 Europe.

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Water Awareness and Safety (WAS)

Course overview and target audience

Water Awareness and Safety (WAS) is a classroom-based course that looks at hazards and risks associated with inland (lakes, canals, rivers) and coastal water. It looks at basic control measures and safe working practices that can be introduced, including types of PPE and zoning to ensure workers understand the dangers of water and how to avoid accidental immersion.

This course is designed for people tasked with working near water but who will not be expected to work within 3m of the water's edge and will not necessarily be issued with any water PPE

Contact hours 3.5 hours (0.5 days)	Prerequisites None
Qualification valid for 3 years	Accredited by Rescue 3 Europe

Taught by

- Water Awareness and Safety Instructor (WASI)
- Safe Working Near Water Instructor (SWNWI)
- Safe Working In Water Instructor (SWIWI)

Assessment

The assessed elements of this course are:

- Foundation knowledge



Water Awareness and Safety (WAS) skill sheet contents

Theory
1. About Rescue 3 Europe
2. Workplace legislation
3. Safe systems of work
4. Risk assessments
5. Pre-planning for emergencies
6. Water hazards
7. Cold water considerations
8. Mud, ice and coastal considerations
9. Biosecurity and environmental considerations
10. Medical and decontamination considerations
11. Further training and PPE for working near/in water
12. Accidental immersion considerations



Water Awareness and Safety (WAS) learning outcomes and key teaching points

	Skill sheet element		Learning outcome	Key teaching points
1	About Rescue 3 Europe	1.1	Recognise the role of Rescue 3 Europe as an accrediting body	Rescue 3 as an accrediting body. Designing safety and rescue courses – not just ‘rescue’
		1.2	Recognise the different industry training courses available within the Rescue 3 scheme	Courses for emergency services, whitewater professionals, construction workers, environment agency personnel, production crews etc
		1.3	Recall the remit and role of people trained to WAS level	This course is designed for people tasked with working near water but who will not be expected to work within 3m of the water’s edge and will not necessarily be issued with any water PPE. Recertification requirements
2	Workplace legislation	2.1	Recall local or national legislation that affects safe working near or in water	Generic health and safety legislation, eg Health and Safety and Work Act. Industry-specific, eg Construction Design and Management Regulations 2015. Equipment specific, eg Personal Protective Equipment at Work Regulations 1992
3	Safe systems of work	3.1	Identify the elements of an effective safe system of work (method statement)	Hazard identification, risk assessment, method statement, rescue plan, permit to work, dynamic risk assessment, site/team briefing, operations, evaluation



	Skill sheet element		Learning outcome	Key teaching points
4	Risk assessments	4.1	Identify the elements of an effective generic or site-specific risk assessment	Awareness of generic and site-specific risk assessment (5 stages)
		4.2	Identify the elements of an effective dynamic risk assessment	Real-time process ensuring actual situational risks are identified, evaluated and managed, that may not be covered by written risk assessment process
		4.3	Perform a dynamic risk assessment of a work site	Real-time process ensuring actual situational risks are identified, evaluated and managed, that may not be covered by written risk assessment process
5	Pre-planning for emergencies	5.1	Recall what information a worker will need to know when pre-planning for emergencies when working near water	What'll happen if I fall in? Downstream hazards, downstream exit. Who's going to rescue me? Alerting emergency services. Lone worker considerations. What type of rescue tools may be used to rescue me? Reach poles throwbags, buoyant aids etc, How do I assist the rescuer? Stay on back, making yourself as big a target as possible, swim towards them etc. Weather forecasts. Cold water immersion considerations – packaging eg survival bag, change of clothes
6	Water hazards	6.1	Identify water hazards in a basic water environment	Flat water hazards, entrapment hazards, muddy bottoms to lakes and canals
		6.2	Identify water hazards in a moving water environment	Fast current. Bends in the river. Undercuts. Strainers. Siphons. Stoppers. Weirs. Etc. Identifying and understanding current vector
		6.3	Recall importance of avoidance and control measures	The focus on this course (compared to SWIIV) is for people who will not be tasked to intentionally enter the water



	Skill sheet element		Learning outcome	Key teaching points
7	Cold water considerations	7.1	Recall signs and symptoms of cold water shock	Cold water shock. Reduced capability
		7.2	Recall coping strategies when faced with accidental immersion in cold water	1-10-1 rule
8	Mud, ice and coastal considerations	8.1	Recall hazards associated with mud, ice and coastal environments and suitable control measures	Mud: Awareness, avoidance. What to do if you accidentally find yourself in mud eg spread weight, avoid standing. Estuaries, canals, dams, sediment etc. Cleaning/decontamination issues. Ice: Awareness, avoidance. What to do if you find yourself on/in ice, eg 1-10-1, spreading weight, keeping low, getting out the same way you come in Coastal: Tides, changes in water level, loss of access/egress, change of flow direction. Estuary mud flats
9	Biosecurity and environmental considerations	9.1	Identify areas of work where cross contamination, or introduction of invasive species may be possible and suitable control measures	Check, clean, dry. Cross-contamination. Decontamination. Consideration of invasive species. Pollution. Damage to flora and fauna. Reporting
10	Medical and decontamination considerations	10.1	Identify signs/symptoms and treatment for common medical issues found in a water environment	Hypothermia (too cold), hyperthermia (too hot), drowning, infection (eg leptospirosis, hepatitis), trauma eg bank hazards (slips, trips, falls), cold water shock
		10.2	Recall the importance of minimising exposure to the water and decontamination procedures post-exposure	Check, clean, dry. Hand wipes, face wipes, cover cuts etc
		10.3	Identify bank hazards and suitable control measures to prevent slips trips and falls	Wet, steep, slippery, muddy banks, overhanging branches, vegetation. Control measures: zoning, PPE and training



	Skill sheet element		Learning outcome	Key teaching points
11	Further training & PPE for working near/in water	11.1	Recall further training available for personnel who will be tasked to work near or in water within the Rescue 3 scheme	This session should look at further training offered by Rescue 3 including working near and in water
		11.2	Recall appropriate forms of PPE for working near or in water	The differences between lifejacket and buoyancy aids can be explained and which is appropriate in which environment. Other forms of PPE can be discussed such as waders, drysuits and wetsuits and their pros and cons for a work environment
12	Accidental immersion considerations	12.1	Identify hazards and control measures of accidental immersion in water	All WAS trained personnel should not be within three metres of the waters edge. However, if they do find themselves in water, they should understand about the effect of temperature and cold water shock
		12.2	Recognise the importance of keeping feet up if swept away	All WAS trained personnel should not be within three metres of the waters edge. However, if they do find themselves in water, they should understand about entrapment possibilities
		12.3	Recall defensive swimming position and swimming techniques to attain safe eddy or bank	All WAS trained personnel should not be within three metres of the waters edge. However, if they do find themselves in water, they should understand the safe swimming position and simple safe swim techniques enabling them to get to shore



Lifejacket Competent User (LJCU)

Course overview and target audience

The Lifejacket Competent User course is designed for workers who are issued with a lifejacket and who are expected to work near water as part of their job function, but do not wish to complete a full Safe Working Near Water course. This is either because they already have a Water Awareness and Safety course or they only wish to know how to don and doff a lifejacket and care for it.

It is not intended that these workers will enter the water as part of their work, and a manual- or auto-inflation lifejacket is issued as PPE for accidental water entry only, though the course will cover this possibility practically to ensure workers are prepared for the event if it does happen

Workers requiring a more comprehensive working near- or in-water capability can take the Rescue 3 Europe Safe Working Near Water or Safe Working In Water course.

Contact hours 3.5 hours (0.5 days)	Prerequisites None
Qualification valid for 3 years	Accredited by Rescue 3 Europe

Taught by

- Safe Working Near Water Instructor (SWNWI)
- Safe Working In Water Instructor (SWIWI)

Assessment

The assessed elements of this course are:

- Foundation knowledge
- Pre- and post-use lifejacket checks
- Swimming and self-rescue in a lifejacket



Lifeguard Competent User (LJCU) skill sheet contents

Theory
1. About Rescue 3 Europe
2. Workplace legislation
3. Safe systems of work
4. Cold water considerations
5. Medical and decontamination considerations
6. Accidental immersion considerations
7. Lifeguard and PPE selection
8. Lifeguard maintenance, periodic inspection and transportation
9. Lifeguard firing mechanisms
10. Lifeguard accidental inflation risks
Practical
11. Pre- and post-use lifeguard checks
12. Lifeguard inflation and deflation - auto/manual
13. Swimming and self-rescue in lifeguards
14. Throwbags and other conditional rescues
15. Exiting the water



Lifejacket Competent User (LJCU) learning outcomes and key teaching points

	Skill sheet element		Learning outcome	Key teaching points
1	About Rescue 3 Europe	1.1	Recognise the role of Rescue 3 Europe as an accrediting body	Rescue 3 as an accrediting body. Designing safety and rescue courses – not just ‘rescue’
		1.2	Recognise the different industry training courses available within the Rescue 3 scheme	Courses for emergency services, whitewater professionals, construction workers, environment agency personnel, production crews etc
		1.3	Recall the remit and role of people trained to LJCU level	The Lifejacket Competent User course is designed for workers who are issued with a lifejacket and who are expected to work near water as part of their job function, but do not wish to complete a full Safe Working Near Water course. This is either because they already have a Water Awareness and Safety course or they only wish to know how to don and doff a lifejacket and care for it. Recertification requirements
2	Workplace legislation	2.1	Recall local or national legislation that affects safe working near or in water	Generic health and safety legislation, eg Health and Safety and Work Act. Industry-specific, eg Construction Design and Management Regulations 2015. Equipment specific, eg Personal Protective Equipment at Work Regulations 1992
3	Safe systems of work	3.1	Identify the elements of an effective safe system of work (method statement)	Hazard identification, risk assessment, method statement, rescue plan, permit to work, dynamic risk assessment, site/team briefing, operations, evaluation



	Skill sheet element		Learning outcome	Key teaching points
4	Cold water considerations	4.1	Recall signs and symptoms of cold water shock	Cold water shock. Reduced capability
		4.2	Recall coping strategies when faced with accidental immersion in cold water	1-10-1 rule
5	Medical and decontamination considerations	5.1	Identify signs/symptoms and treatment for common medical issues found in a water environment	Hypothermia (too cold), hyperthermia (too hot), drowning, infection (eg leptospirosis, hepatitis), trauma eg bank hazards (slips, trips, falls), cold water shock
		5.2	Recall the importance of minimising exposure to the water and decontamination procedures post-exposure	Check, clean, dry. Hand wipes, face wipes, cover cuts etc
		5.3	Identify bank hazards and suitable control measures to prevent slips trips and falls	Wet, steep, slippery, muddy banks, overhanging branches, vegetation. Control measures: zoning, PPE and training
6	Accidental immersion considerations	6.1	Identify hazards and control measures of accidental immersion in water	The LJCU course is not designed for workers who need to work in the water. However, if they do find themselves in water, they should understand about the effect of temperature and cold water shock
		6.2	Recognise the importance of keeping feet up if swept away	The LJCU course is not designed for workers who need to work in the water. However, if they do find themselves in water, they should understand about entrapment possibilities
		6.3	Recall defensive swimming position and swimming techniques to attain safe eddy or bank	The LJCU course is not designed for workers who need to work in the water. However, if they do find themselves in water, they should understand the safe swimming position and simple safe swim techniques enabling them to get to shore



	Skill sheet element		Learning outcome	Key teaching points
7	Lifejacket and PPE selection	7.1	Identify differences between lifejackets and buoyancy aids and appropriate environments for their use	Explain difference between lifejacket and buoyancy aid, different levels of buoyancy in lifejackets depending on work task and environment, eg 150N or 275N. Impact protection. Don't have manual inflation lifejacket if lone working
		7.2	Identify national and international lifejacket standards	Applicable standards, eg ISO 12402
		7.3	Identify other appropriate PPE for use when working near water	Appropriate clothing and footwear - thermal properties, capability in water. Weight of equipment carried Considerations for waders, drysuit, wetsuit. Risks posed by combination of lifejacket and a helmet due to chin straps post inflation
8	Lifejacket maintenance, periodic inspection and transportation	8.1	Recall manufacturer's recommendations for rearming, maintenance and inspection of lifejackets	Manufacturer's recommendations for periodic inspection/servicing – eg returning to service centre/manufacturer. Manufacturer's rearming and maintenance guidelines for chosen lifejacket
		8.2	Recall agency or organisation's recommendations for rearming, maintenance and inspection of lifejackets where different from manufacturer's	Identifying where your organisation's recommendations may be stricter than manufacturer's requirements
		8.3	Compare the resilience to sharps of inflatable lifejackets vs. closed cell life jackets or buoyancy aids	Inflatable lifejackets vs. closed-cell foam
		8.4	Recall correct procedures for storage, transportation, and use of lifejackets to protect from sharps and contamination	Transportation and storage considerations, including protection from sharps



	Skill sheet element		Learning outcome	Key teaching points
9	Lifejacket firing mechanisms	9.1	Identify types of firing mechanism, their merits and limitations	Different types, eg Halkey-Roberts, United Moulders (UML Mark 5), Hammar. Expiry dates. Automatic firing cartridge, firing block, gas cylinder
10	Lifejacket accidental inflation risks	10.1	Identify hazards associated with accidental deployment in a variety of high risk areas and tasks and suitable control measures	Wearing of lifejacket in correct environment. Don't wear below deck of boats. Don't wear in confined spaces. Don't wear in cabs/vehicles/ aircraft
		10.2	Identify the hazards and merits of auto vs. manual inflation in a variety of high risk areas and tasks	Don't wear auto-inflating lifejackets under clothing or under bags (eg rucksacks)
11	Pre- and post-use lifejacket checks	11.1	Demonstrate appropriate pre-use checks for the selected lifejacket	Pre-use: Correct fitting of selected lifejacket. Safety checks. Check automatic capsule. CO2 cylinder seals. Corrosion. Air holding properties. Firing head test without CO2 cylinder and automatic capsule in place. Check oral inflation cap
		11.2	Demonstrate appropriate post-use checks for the selected lifejacket	Post-use: General condition. Abrasion. Punctures. Corrosion
12	Lifejacket inflation and deflation - auto/manual	12.1	Identify the hazards and merits of auto vs. manual inflation	Differences between auto and manual. Manual: Worker deployment required. Unsuitable for lone workers. Will not inflate if worker is unconscious. Auto: Speed of deployment. Risk of accidental deployment
		12.2	Observe the auto-inflation of a lifejacket, and identify the associated hazards	Observation of auto-inflation of lifejacket
		12.3	Demonstrate manual inflation of a lifejacket	Performing manual inflation of a lifejacket



	Skill sheet element		Learning outcome	Key teaching points
13	Swimming and self-rescue in lifejackets	13.1	Demonstrate the defensive swimming position in a lifejacket	Importance of defensive swimming position. Difficulties of swimming in a lifejacket
		13.2	Demonstrate setting correct angles in the current to defensively swim to the bank	Practical session includes setting of correct body angle in defensive position, and swimming to the side, eg of lake, slow-moving water
14	Throwbags and other conditional rescues	14.1	Identify conditional rescue options and the limitations of conditional rescues	Conditional rescues rely on participation of the person in the water
		14.2	Identify, check and prepare suitable equipment for performing a conditional rescue	Use of a reach pole or other reaching tools, eg paddle/branches etc. Use of throwbags, deployment
		14.3	Identify appropriate sites where conditional rescues can be performed	Position for throw (safety of thrower, place to bring worker into safe area and onto dry land, avoiding trees and other overhead objects)
		14.4	Demonstrate the correct method for receiving a throwbag following accidental immersion	Practical session in flat or slow moving grade 1 water
		14.5	Perform a variety of conditional rescues	Practical session in flat or slow moving grade 1 water. Conditional rescues rely on participation of the person in the water. This session should include talking or encouraging the victim to swim to shore. Use of a reach pole or other reaching tools, eg paddle/branches etc. Use of throwbags, deployment. Type of throw (overhand, underhand)



	Skill sheet element		Learning outcome	Key teaching points
15	Exiting the water	15.1	Identify hazards that affect a swimmer trying to exit a river	Difficulties to self-rescue when wearing a lifejacket. Where to get out – steepness of bank, and river bank strainers, depth and flow rate of river etc. Slips, trips and falls. Sharp objects near river bank
		15.2	Demonstrate safe exit from river at an appropriate site	Practical session exiting flat or slow-moving grade 1 water



Safe Working Near Water (SWNW)

Course overview and target audience

The Safe Working Near Water course is designed for people tasked with working near water and who will be issued with lifejackets but will not be expected to intentionally enter the water, eg EA, SEPA, NRW personnel, construction industry workers, road and bridge maintenance workers.

Contact hours 6 hours (1 day)	Prerequisites None
Qualification valid for 3 years	Accredited by Rescue 3 Europe

Taught by

- Safe Working Near Water Instructor (SWNWI)
- Safe Working In Water Instructor (SWIWI)

Assessment

The assessed elements of this course are:

- Foundation knowledge
- Pre- and post-use lifejacket checks
- Conditional rescue of swimmer in lifejacket



Safe Working Near Water (SWNW) skill sheet contents

Theory
1. About Rescue 3 Europe
2. Workplace legislation
3. Safe systems of work
4. Risk assessments
5. Pre-planning for emergencies
6. Water hazards
7. Cold water considerations
8. Mud, ice and coastal considerations
9. Biosecurity and environmental considerations
10. Medical and decontamination considerations
11. Lifejacket and PPE selection
12. Lifejacket maintenance, periodic inspection and transportation
13. Lifejacket firing mechanisms
14. Lifejacket accidental inflation risks
Practical
15. Pre- and post-use lifejacket checks
16. Lifejacket inflation and deflation - auto/manual
17. Swimming and self-rescue in lifejackets
18. Throwbags and other conditional rescues
19. Exiting the water after accidental immersion
If used by agency
20. Considerations for tethered working (if used by agency)



Safe Working Near Water (SWNW) learning outcomes and key teaching points

	Skill sheet element		Learning outcome	Key teaching points
1	About Rescue 3 Europe	1.1	Recognise the role of Rescue 3 Europe as an accrediting body	Rescue 3 as an accrediting body. Designing safety and rescue courses – not just ‘rescue’
		1.2	Recognise the different industry training courses available within the Rescue 3 scheme	Courses for emergency services, whitewater professionals, construction workers, environment agency personnel, production crews etc
		1.3	Recall the remit and role of people trained to SWNW level	The Safe Working Near Water course is designed for people tasked with working near water and who will be issued with lifejackets but will not be expected to intentionally enter the water, eg EA, SEPA, NRW personnel, construction industry workers, road and bridge maintenance workers. Recertification requirements
2	Workplace legislation	2.1	Recall local or national legislation that affects safe working near or in water	Generic health and safety legislation, eg Health and Safety and Work Act. Industry-specific, eg Construction Design and Management Regulations 2015. Equipment specific, eg Personal Protective Equipment at Work Regulations 1992
3	Safe systems of work	3.1	Identify the elements of an effective safe system of work (method statement)	Hazard identification, risk assessment, method statement, rescue plan, permit to work, dynamic risk assessment, site/team briefing, operations, evaluation



	Skill sheet element		Learning outcome	Key teaching points
4	Risk assessments	4.1	Identify the elements of an effective generic or site-specific risk assessment	Awareness of generic and site-specific risk assessment (5 stages)
		4.2	Identify the elements of an effective dynamic risk assessment	Real-time process ensuring actual situational risks are identified, evaluated and managed, that may not be covered by written risk assessment process
		4.3	Perform a dynamic risk assessment of a work site	Real-time process ensuring actual situational risks are identified, evaluated and managed, that may not be covered by written risk assessment process
5	Pre-planning for emergencies	5.1	Recall what information a worker will need to know when pre-planning for emergencies when working near water	What'll happen if I fall in? Downstream hazards, downstream exit. Who's going to rescue me? Alerting emergency services. Lone worker considerations. Weather forecasts. Cold water immersion considerations – packaging eg survival bag, change of clothes
6	Water hazards	6.1	Identify water hazards in a basic water environment	Flat water hazards, entrapment hazards, muddy bottoms to lakes and canals
		6.2	Identify water hazards in a moving water environment	Fast current. Bends in the river. Undercuts. Strainers. Siphons. Stoppers. Weirs. Structures, eg scaffolding, bridge pillars etc. Identifying and understanding current vector
		6.3	Recall importance of avoidance and control measures	The focus on this course (compared to SWIIV) is for people who will not be tasked to intentionally enter the water
7	Cold water considerations	7.1	Recall signs and symptoms of cold water shock	Cold water shock. Reduced capability
		7.2	Recall coping strategies when faced with accidental immersion in cold water	1-10-1 rule



	Skill sheet element		Learning outcome	Key teaching points
8	Mud, ice and coastal considerations	8.1	Recall hazards associated with mud, ice and coastal environments and suitable control measures	Mud: Awareness, avoidance. What to do if you accidentally find yourself in mud eg spread weight, avoid standing. Estuaries, canals, dams, sediment etc. Cleaning/decontamination issues. Ice: Awareness, avoidance. What to do if you find yourself on/in ice, eg 1-10-1, spreading weight, keeping low, getting out the same way you come in Coastal: Tides, changes in water level, loss of access/egress, change of flow direction. Estuary mud flats
9	Biosecurity and environmental considerations	9.1	Identify areas of work where cross contamination, or introduction of invasive species may be possible and suitable control measures	Check, clean, dry. Cross-contamination. Decontamination. Consideration of invasive species. Pollution. Damage to flora and fauna. Reporting
10	Medical and decontamination considerations	10.1	Identify signs/symptoms and treatment for common medical issues found in a water environment	Hypothermia (too cold), hyperthermia (too hot), drowning, infection (eg leptospirosis, hepatitis), trauma eg bank hazards (slips, trips, falls), cold water shock
		10.2	Recall the importance of minimising exposure to the water and decontamination procedures post-exposure	Check, clean, dry. Hand wipes, face wipes, cover cuts etc
		10.3	Identify bank hazards and suitable control measures to prevent slips trips and falls	Wet, steep, slippery, muddy banks, overhanging branches, vegetation. Control measures: zoning, PPE and training



	Skill sheet element		Learning outcome	Key teaching points
11	Lifejacket and PPE selection	11.1	Identify differences between lifejackets and buoyancy aids and appropriate environments for their use	Explain difference between lifejacket and buoyancy aid, different levels of buoyancy in lifejackets depending on work task and environment, eg 150N or 275N. Impact protection. Don't have manual inflation lifejacket if lone working
		11.2	Identify national and international lifejacket standards	Applicable standards, eg ISO 12402
		11.3	Identify other appropriate PPE for use when working near water	Appropriate clothing and footwear - thermal properties, capability in water. Weight of equipment carried Considerations for waders, drysuit, wetsuit. Combination of lifejacket and a helmet and the risk posed with chin straps post inflation
12	Lifejacket maintenance, periodic inspection and transportation	12.1	Recall manufacturer's recommendations for rearming, maintenance and inspection of lifejackets	Manufacturer's recommendations for periodic inspection/servicing – eg returning to service centre/ manufacturer. Manufacturer's rearming and maintenance guidelines for chosen lifejacket
		12.2	Recall agency or organisation's recommendations for rearming, maintenance and inspection of lifejackets where different from manufacturer's	Identifying where your organisation's recommendations may be stricter than manufacturer's requirements
		12.3	Compare the resilience to sharps of inflatable lifejackets vs. closed cell life jackets or buoyancy aids	Inflatable lifejackets vs. closed-cell foam
		12.4	Recall correct procedures for storage, transportation, and use of lifejackets to protect from sharps and contamination	Transportation and storage considerations, including protection from sharps



	Skill sheet element		Learning outcome	Key teaching points
13	Lifejacket firing mechanisms	13.1	Identify types of firing mechanism, their merits and limitations	Different types, eg Halkey-Roberts, United Moulders (UML Mark 5), Hammar. Expiry dates. Automatic firing cartridge, firing block, gas cylinder
14	Lifejacket accidental inflation risks	14.1	Identify hazards associated with accidental deployment in a variety of high risk areas and tasks and suitable control measures	Wearing of lifejacket in correct environment. Don't wear below deck of boats. Don't wear in confined spaces. Don't wear in cabs/vehicles/ aircraft
		14.2	Identify the hazards and merits of auto vs. manual inflation in a variety of high risk areas and tasks	Don't wear auto-inflating lifejackets under clothing or under bags (eg rucksacks)
15	Pre- and post-use lifejacket checks	15.1	Demonstrate appropriate pre-use checks for the selected lifejacket	Pre-use: Correct fitting of selected lifejacket. Safety checks. Check automatic capsule. CO2 cylinder seals. Corrosion. Air holding properties. Firing head test without CO2 cylinder and automatic capsule in place. Check oral inflation cap
		15.2	Demonstrate appropriate post-use checks for the selected lifejacket	Post-use: General condition. Abrasion. Punctures. Corrosion
16	Lifejacket inflation and deflation - auto/manual	16.1	Identify the hazards and merits of auto vs. manual inflation	Differences between auto and manual. Manual: Worker deployment required. Unsuitable for lone workers. Will not inflate if worker is unconscious. Auto: Speed of deployment. Risk of accidental deployment
		16.2	Observe the auto-inflation of a lifejacket, and identify the associated hazards	Observation of auto-inflation of a lifejacket
		16.3	Demonstrate manual inflation of a lifejacket	Performing manual inflation of a lifejacket



	Skill sheet element		Learning outcome	Key teaching points
17	Swimming and self-rescue in lifejackets	17.1	Demonstrate the defensive swimming position in a lifejacket	Importance of defensive swimming position. Difficulties of swimming in a lifejacket
		17.2	Demonstrate setting correct angles in the current to defensively swim to the bank	Practical session includes setting of correct body angle in defensive position, and swimming to the side, eg of lake, slow-moving water
18	Throwbags and other conditional rescues	18.1	Identify conditional rescue options and the limitations of conditional rescues	Conditional rescues rely on participation of the person in the water
		18.2	Identify, check and prepare suitable equipment for performing a conditional rescue	Use of a reach pole or other reaching tools, eg paddle/branches etc. Use of throwbags, deployment
		18.3	Identify appropriate sites where conditional rescues can be performed	Position for throw (safety of thrower, place to bring worker into safe area and onto dry land, avoiding trees and other overhead objects)
		18.4	Demonstrate the correct method for receiving a throwbag following accidental immersion	Practical session in flat or slow moving grade 1 water
		18.5	Perform a variety of conditional rescues	Practical session in flat or slow moving grade 1 water. Conditional rescues rely on participation of the person in the water. This session should include talking or encouraging the victim to swim to shore. Use of a reach pole or other reaching tools, eg paddle/branches etc. Use of throwbags, deployment. Type of throw (overhand, underhand)



	Skill sheet element		Learning outcome	Key teaching points
19	Exiting the water after accidental immersion	19.1	Identify hazards that affect a swimmer trying to exit a river	Difficulties to self-rescue when wearing a lifejacket. Where to get out – steepness of bank, and river bank strainers, depth and flow rate of river etc. Slips, trips and falls. Sharp objects near river bank
		19.2	Identify an exit point and use an appropriate swimming or wading technique to exit the water course.	Swim or wade to the exit point using appropriate techniques.
		19.3	Identify ways to assist a swimmer from the water and potential hazards to self.	Use a reach tool. Understand the limits of offering a 'hand' to the person in the water.
		19.4	Demonstrate safe exit from river at an appropriate site	Practical session exiting flat or slow-moving grade 1 water
20	Considerations for tethered working (if used by agency)	20.1	Recall factors which will dictate whether a handheld tether is needed for a worker on a riverbank.	Angle of bank, conditions underfoot (eg roots, rocks, loose terrain), wet, slippery mud, flood defence matting. Consequences of a fall, eg physical injury or ending up in the water. Grade of water or consequences downstream. Releasability of tether. Hand tethers are a low control system and should only be used in a low consequence setting, eg by canals, dykes etc.
		20.2	Recall appropriate releasable attachment options for tethers	Use of buoyancy aid and quick release harness. If workers may end up in water, a releasable system must be used. If they do not have a releasable system, then a system to prevent entry to water, via training, zoning and work restraint must be used. Observe bank-based or in-water harness release.
		20.3	Recall other safety measures that may be used instead of or alongside a handheld tether.	Standby safety team and the factors that dictate whether they're needed. Zoning, barriers, work restraint that prevents water entry completely. Further practical training via the Rescue 3 Safe Working In Water course.





Safe Working In Water (SWIWI)

Course overview and target audience

The Safe Working In Water (SWIWI) course is designed for people tasked with working in moving and still water who will need a self- and co-worker rescue capability using conditional rescue techniques, eg throwbags, wading techniques and reach poles. The target audience is EA, SEPA, NRW personnel, construction industry workers, road and bridge maintenance workers.

This course offers a higher level rescue capability than the Safe Working Near Water (SWNW) course. For working in still water only, see Safe Working In Still Water (SWISW).

Contact hours 12 hours (2 days)	Prerequisites Able to swim
Qualification valid for 3 years	Accredited by Rescue 3 Europe

Taught by

- Safe Working In Water Instructor (SWIWI)

Assessment

The assessed elements of this course are:

- Foundation knowledge
- Shallow water techniques
- Swimming and self-rescue in buoyancy aids and lifejackets
- Throwbags and other conditional rescues



Safe Working In Water (SWIW) skill sheet contents

Theory
1. About Rescue 3 Europe
2. Workplace legislation
3. Safe systems of work
4. Risk assessments
5. Pre-planning for emergencies and rescue
6. Hydrology and water hazards
7. Cold water considerations
8. Mud, ice and coastal considerations
9. Biosecurity and environmental considerations
10. Medical and decontamination considerations
11. Lifejackets vs. buoyancy aids
12. Buoyancy aid and lifejacket maintenance, periodic inspection and transportation
13. Lifejacket firing mechanisms
14. Lifejacket accidental inflation risks
15. Personal and team equipment
16. Considerations for night/poor visibility working
17. Communications
Practical
18. Pre- and post-use lifejacket checks
19. Lifejacket inflation and deflation - auto/manual
20. Swimming and self-rescue in lifejackets and/or buoyancy aids
21. Throwbags and other conditional rescues
22. Shallow water techniques
23. Tethered shallow water techniques
24. Strainer swim
25. People and equipment entrapments



Safe Working In Water (SWIW) learning outcomes and key teaching points

	Skill sheet element		Learning outcome	Key teaching points
1	About Rescue 3 Europe	1.1	Recognise the role of Rescue 3 Europe as an accrediting body	Rescue 3 as an accrediting body. Designing safety and rescue courses – not just ‘rescue’
		1.2	Recognise the different industry training courses available within the Rescue 3 scheme	Courses for emergency services, whitewater professionals, construction workers, environment agency personnel, production crews etc
		1.3	Recall the remit and role of people trained to SWIW level	The Safe Working In Water (SWIW) course is designed for people tasked with working in moving and still water who will need a self- and co-worker rescue capability using conditional rescue techniques, eg throwbags, wading techniques and reach poles. The target audience is EA, SEPA, NRW personnel, construction industry workers, road and bridge maintenance workers. This course offers a higher level rescue capability than the Safe Working Near Water (SOWNW) course. For working in still water only, see Safe Working In Still Water (SWISW). Recertification requirements
2	Workplace legislation	2.1	Recall local or national legislation that affects safe working near or in water	Generic health and safety legislation, eg Health and Safety and Work Act. Industry-specific, eg Construction Design and Management Regulations 2015. Equipment specific, eg Personal Protective Equipment at Work Regulations 1992



	Skill sheet element		Learning outcome	Key teaching points
3	Safe systems of work	3.1	Identify the elements of an effective safe system of work (method statement)	Hazard identification, risk assessment, method statement, rescue plan, permit to work, dynamic risk assessment, site/team briefing, operations, evaluation
4	Risk assessments	4.1	Identify the elements of an effective generic or site-specific risk assessment	Awareness of generic and site-specific risk assessment (5 stages)
		4.2	Identify the elements of an effective dynamic risk assessment	Real-time process ensuring actual situational risks are identified, evaluated and managed, that may not be covered by written risk assessment process
		4.3	Perform a dynamic risk assessment of a work site	Real-time process ensuring actual situational risks are identified, evaluated and managed, that may not be covered by written risk assessment process
5	Pre-planning for emergencies and rescues	5.1	Recall what information a worker will need to know when pre-planning for emergencies and rescues when working near water	What'll happen if a worker falls in? Downstream hazards, downstream exit. Who's going to rescue them/me? Alerting emergency services. Lone worker considerations. Co-worker rescue capability, including training, pre-positioning and access to rescue tools. Weather forecasts. Cold water immersion considerations – packaging eg survival bag, change of clothes
		5.2	Recall control measures to avoid accidents and emergencies in a water environment	Training, PPE, on-site briefing. Co-worker rescue capability, including training, pre-positioning and access to rescue tools



	Skill sheet element		Learning outcome	Key teaching points
6	Hydrology and water hazards	6.1	Recall the definitions of basic water, moving water, coastal water, swiftwater and whitewater	Basic: typically still, flat water, eg lakes, ponds and canals. Moving: flowing down a gradient, eg streams, rivers and drainage channels. Coastal: coastal sea, ocean, estuaries. Swiftwater: fast moving, steeper gradient, eg steep rivers, drainage channels, flash flood conditions. Whitewater: fast moving, steeper gradient, used for kayaking, rafting
		6.2	Identify the effect that volume, gradient and obstacles have on water	Volume - increase in energy. Gradient - increase in speed. Obstacles - creation of retentive water features, impact risk, siphon/strainer risk
		6.3	Identify water features	River hydrology including speed, depth and width. Current vectors. Waves. Stoppers. Eddies. Eddy lines. Downstream Vs
		6.4	Describe the impact water features would have on individuals in water	Force of water, impact risk, retentive features, entrapments
		6.5	Identify water hazards in a basic water environment	Flat water hazards, entrapment hazards, muddy bottoms to lakes and canals
		6.6	Identify water hazards in a moving water environment	Fast current. Bends in the river. Undercuts. Strainers. Siphons. Stoppers. Weirs. Structures, eg scaffolding, bridge pillars etc. Identifying and understanding current vector
		6.7	Recall importance of avoidance and control measures	The focus on this course (compared to SWNW) is for people who will intentionally enter the water
7	Cold water considerations	7.1	Recall signs and symptoms of cold water shock	Cold water shock. Reduced capability
		7.2	Recall coping strategies when faced with accidental immersion in cold water	1-10-1 rule. Appropriate PPE when working in water, eg drysuits with thermal layers, wetsuits



	Skill sheet element		Learning outcome	Key teaching points
8	Mud, ice and coastal considerations	8.1	Recall hazards associated with mud, ice and coastal environments and suitable control measures	Mud: Awareness, avoidance. What to do if you accidentally find yourself in mud eg spread weight, avoid standing. Estuaries, canals, dams, sediment etc. Cleaning/ decontamination issues. Ice: Awareness, avoidance. What to do if you find yourself on/in ice, eg 1-10-1, spreading weight, keeping low, getting out the same way you come in. Coastal: Tides, changes in water level, loss of access/egress, change of flow direction. Estuary mud flats
9	Biosecurity and environmental considerations	9.1	Identify areas of work where cross contamination, or introduction of invasive species may be possible and suitable control measures	Check, clean, dry. Cross-contamination. Decontamination. Consideration of invasive species. Pollution. Damage to flora and fauna. Reporting
10	Medical and decontamination considerations	10.1	Identify signs/symptoms and treatment for common medical issues found in a water environment	Hypothermia (too cold), hyperthermia (too hot), drowning, infection (eg leptospirosis, hepatitis), trauma eg bank hazards (slips, trips, falls), cold water shock
		10.2	Recall the importance of minimising exposure to the water and decontamination procedures post-exposure	Check, clean, dry. Hand wipes, face wipes, cover cuts etc
		10.3	Identify bank hazards and suitable control measures to prevent slips trips and falls	Wet, steep, slippery, muddy banks, overhanging branches, vegetation. Control measures: zoning, PPE and training



	Skill sheet element		Learning outcome	Key teaching points
11	Lifejackets vs. buoyancy aids	11.1	Identify differences between lifejackets and buoyancy aids	Explain difference between lifejacket and buoyancy aid. Buoyancy aid for planned entry to the water. Lifejacket for unplanned entry (ie worker falling in). Buoyancy aid doesn't roll an unconscious casualty. A lifejacket is designed to ensure that the wearer is floating in the correct position with their mouth and nose clear of the surface of the water. Different levels of buoyancy in lifejackets depending on work task and environment, eg 150N or 275N
		11.2	Identify national and international lifejacket and buoyancy aid standards	Applicable standards, eg ISO 12402
		11.3	Identify in which environments and for which work tasks lifejackets and buoyancy aids are appropriate and their pros and cons	Buoyancy aid for planned entry to the water. Lifejacket for unplanned entry (ie worker falling in). Consequence of accidentally entering the water, ie water, speed, obstacles, depth may need additional impact protection of a buoyancy aid. Ease of swimming in buoyancy aid, compared to difficulties in a lifejacket. No danger of accidental inflation in buoyancy aid. Buoyancy aid is less susceptible to sharps. Lifejackets unsuitable for an in-water co-worker rescue response



	Skill sheet element		Learning outcome	Key teaching points
12	Buoyancy aid and lifejacket maintenance, periodic inspection and transportation	12.1	Recall manufacturer's recommendations for rearming, maintenance and inspection of lifejackets and buoyancy aids	Manufacturer's recommendations for periodic inspection/servicing of lifejackets– eg returning to service centre/manufacturer. Manufacturer's rearming and maintenance guidelines. Periodic float testing of buoyancy aids. Bulkier to store and transport
		12.2	Recall agency or organisation's recommendations for rearming, maintenance and inspection of lifejackets and buoyancy aids where different from manufacturer's	Identifying where your organisation's recommendations may be stricter than manufacturer's requirements
		12.3	Compare the resilience to sharps of inflatable lifejackets vs. closed cell life jackets or buoyancy aids	Inflatable lifejackets vs. closed-cell foam
		12.4	Recall correct procedures for storage, transportation, and use of lifejackets and buoyancy aids to protect from sharps, exposure to chemicals and contamination	Transportation and storage considerations, including protection from sharps. Avoid exposure to chemicals. Check, clean, dry
13	Lifejacket firing mechanisms	13.1	Identify types of firing mechanism, their merits and limitations	Different types, eg Halkey-Roberts, United Moulders (UML Mark 5), Hammar. Expiry dates. Automatic firing cartridge, firing block, gas cylinder



	Skill sheet element		Learning outcome	Key teaching points
14	Lifejacket accidental inflation risks	14.1	Identify hazards associated with accidental deployment in a variety of high risk areas and tasks and suitable control measures	Wearing of lifejacket in correct environment. Don't wear below deck of boats. Don't wear in confined spaces. Don't wear in cabs/vehicles/ aircraft
		14.2	Identify the hazards and merits of auto vs. manual inflation in a variety of high risk areas and tasks	Don't wear auto-inflating lifejackets under clothing or under bags (eg rucksacks). Combination of lifejacket and a helmet and the risk posed with chin straps post-inflation
15	Personal and team equipment	15.1	Identify personal protective equipment (PPE) for working in water	Likely equipment supplied by organisation. Personal equipment: Drysuit and thermal layers or wetsuit, footwear, helmets, knives, throwbags, buoyancy aid/lifejacket, gloves, sunglasses/eye protection
		15.2	Select appropriate PPE for working in and performing rescues in water	Personal equipment: Drysuit and thermal layers or wetsuit, footwear, helmets, knives, throwbags, buoyancy aid/lifejacket, gloves, sunglasses/eye protection
		15.3	Perform a buddy check	Buddy check of co-worker
		15.4	Identify technical and team equipment for working near and performing rescues in water	Team/other equipment: Throwbags, reach poles, floating aids, survival bags, group shelters, welfare packs, spare change of clothes
		15.5	Recall post-use care and inspection procedures for technical and team equipment	Check, clean, dry. Check hardware for cracks, burrs, damage, corrosion etc. Inspect textiles for fraying, cuts, exposure to chemicals, contamination



	Skill sheet element		Learning outcome	Key teaching points
16	Considerations for night/poor visibility working	16.1	Identify hazards associated with night/poor visibility operations and suitable control measures	Considerations for working at night. Hazards, visibility and communication difficulties, affecting timescales, tracking of equipment and workers. Lighting eg spotlights for the work site, personal lights/ headtorches/ Cyalume/ snaplights for workers and equipment. Buddy system. Increased use of audible communication
		16.2	Identify types of lighting used within night operations	Spotlights for the work site, personal lights, headtorches, Cyalume/ snaplights for workers and equipment
17	Communications	17.1	Recognise hand signals that can be used in a water environment	Hand signals – OK, help, stop, direction, medical assistance
		17.2	Recognise whistle signals that can be used in a water environment	Whistle signals – stop, upstream, downstream, emergency
		17.3	Identify other methods of communication and their limitations	Other methods of communication – radios, mobile phones. Benefits and limitations of each method, eg battery life, water resistance, signal strength
18	Pre- and post-use lifejacket checks	18.1	Demonstrate appropriate pre-use checks for the selected lifejacket	Pre-use: Correct fitting of selected lifejacket. Safety checks. Check automatic capsule. CO2 cylinder seals. Corrosion. Air holding properties. Firing head test without CO2 cylinder and automatic capsule in place. Check oral inflation cap
		18.2	Demonstrate appropriate post-use checks for the selected lifejacket	Post-use: General condition. Abrasion. Punctures. Corrosion



	Skill sheet element		Learning outcome	Key teaching points
19	Lifejacket inflation and deflation - auto/manual	19.1	Identify the hazards and merits of auto vs. manual inflation	Differences between auto and manual. Manual: Worker deployment required. Unsuitable for lone workers. Will not inflate if worker is unconscious. Auto: Speed of deployment. Risk of accidental deployment
		19.2	Observe the auto-inflation of a lifejacket, and identify the associated hazards	Observation of lifejacket auto-inflation
		19.3	Demonstrate manual inflation of a lifejacket	Performing manual inflation of a lifejacket
20	Swimming and self-rescue in lifejackets and/or buoyancy aids	20.1	Demonstrate the defensive swimming position in a lifejacket (if used by agency)	Importance of defensive swimming position. Difficulties of swimming in a lifejacket
		20.2	Demonstrate setting correct angles in the current to defensively swim to the bank in a lifejacket (if used by agency)	Practical session includes setting of correct body angle in defensive position, and swimming to the side, eg of lake, slow-moving water
		20.3	Demonstrate the defensive swimming position	Defensive swimming. Practical session in swiftwater environment
		20.4	Demonstrate the aggressive swimming position	Aggressive swimming. Practical session in swiftwater environment
		20.5	Transition between the defensive and aggressive swimming positions	Transitioning between defensive and aggressive swimming. When and where you would use each to self-rescue
		20.6	Adjust body angle relative to the current vector	In the defensive and aggressive swimming positions
		20.7	Apply swimming techniques, angle control and momentum to perform a variety of tasks	Practical session in swiftwater environment



	Skill sheet element		Learning outcome	Key teaching points
21	Throwbags and other conditional rescues	21.1	Identify conditional rescue options and the limitations of conditional rescues	Conditional rescues rely on participation of the person in the water
		21.2	Identify, check and prepare suitable equipment for performing a conditional rescue	Use of a reach pole or other reaching tools, eg paddle/branches etc. Use of throwbags, deployment
		21.3	Identify appropriate sites where conditional rescues can be performed	Position for throw (safety of thrower, place to bring worker into safe area and onto dry land, avoiding trees and other overhead objects)
		21.4	Demonstrate the correct method for receiving a throwbag	Practical session in swiftwater environment, progressing to minimum grade 2 water. Stay on back, make target/body as large as possible, keep line of sight with rescuer, listen to instructions. When being pulled in, don't wrap rope around body, hold rope close to chest, stay on back when being recovered. Don't let go of the rope until safely on bank.
		21.5	Perform a variety of conditional rescues	Practical session in swiftwater environment, progressing to minimum grade 2 water. Conditional rescues rely on participation of the person in the water. This session should include talking or encouraging the victim to swim to shore. Use of a reach pole or other reaching tools, eg paddle/branches etc. Use of throwbags, deployment. Type of throw (overhand, underhand)
		21.6	Identify methods of managing force directed on a rescuer and victim as water speed increases	Rescuer/belayer moving downstream, or creating strong belay position. Paying out line. Appropriate site choice. Appropriate eddies for recovery



	Skill sheet element		Learning outcome	Key teaching points
22	Shallow water techniques	22.1	Identify the variables and hazards that will directly affect shallow water techniques	Identifying safe areas where shallow water techniques can be used: Depth, water speed, river bed morphology
		22.2	Perform single and team-based shallow water techniques	Single with wading pole, line astern, wedge. Foot placement and use of wading poles to scout for entrapment hazards
		22.3	Explain how the addition of a casualty would affect shallow water techniques	Casualty transportation: Able to assist in their own rescue, middle person in line astern or wedge. Unable to assist or injured: use of stretcher, protection of casualty from the flow
23	Tethered shallow water techniques	23.1	Explain the application of tethered shallow water techniques	Use of tethered systems whilst working in water to negate the need for a conditional rescue if workers fall whilst wading in water
		23.2	Demonstrate attachment to quick release harness	Releasable systems, and attachment methods
		23.3	Perform an in-water release of a quick release harness	Practical session in swiftwater environment
		23.4	Perform a tethered wade in shallow water	Practical session in shallow water
		23.5	Operate a safe belay system for tethered wader(s)	Belay techniques, dynamic or static. Location of belayer(s) appropriate eddies to field co-workers back to shore/position of safety. Worker in water: body position, on back, feet up and in front of them



	Skill sheet element		Learning outcome	Key teaching points
24	Strainers	24.1	Identify strainers and the hazards they pose to rescuers and casualties	Different types of strainers that can be encountered and likely locations, eg bank side or mid-river River bank trees and roots, fallen trees, in water fences, river debris
		24.2	Understand that strainers should be avoided	Importance of avoidance
		24.3	Understand the consequences of going underneath a strainer	Entrapment, drowning, impact injury.
		24.4	Identify rescue options for a casualty in a strainer	Considerations based on training of rescuers, eg tethered wade at SWIW level. Considerations for calling rescue team with higher capability
		24.5	Using a strainer simulator, demonstrate and compare aggressive and defensive approaches to the simulator	Use of strainer simulator to compare defensive and aggressive techniques for getting around or over a strainer. Defensive: Fend off with feet, stabilise and work towards the end of the strainer. Potential to be swept underneath, and need to protect face if this happens. Possible to slow speed of approach with a back paddling action, reducing possibility of injury. Aggressive: Turn into aggressive position early, increase speed to push body up and over strainer. Possibility of injury due to increased speed, though more likely to get over strainer as long as there is a reasonably clean area to push over. This session can be used to highlight many aspects of water safety as well as just avoiding or getting around or over a strainer simulator. Examples include speed of shallow water, how easy it is to be swept away, force of the water when pushed against a strainer simulator etc



	Skill sheet element		Learning outcome	Key teaching points
25	People and equipment entrapments	25.1	Identify the hazards and consequences of foot and body entrapments, and control measures to reduce likelihood	How do entrapments happen and how can they be avoided. River bed morphology, snag hazards avoid by use of defensive swimming position, training, avoiding putting feet down
		25.2	Identify extrication methods of an entrapped casualty	Rescue methods: Shallow water techniques to access casualty and hands on rescue techniques. Two bank access methods and single bank access methods. Stabilisation lines, and line crossing methods
		25.3	Identify risks to the rescuers of an entrapped casualty	Entrapment in same hazard as victim. General water hazards
		25.4	On dry land, demonstrate use of a stabilisation line from one and two banks	This session can be completed practically on dry land or in water as venues dictates





Safe Working In Still Water (SWISW)

Course overview and target audience

The Safe Working In Still Water (SWISW) course is designed for people tasked with working in still water who will need a self- and co-worker rescue capability using conditional rescue techniques, eg throwbags, wading techniques and reach poles. The target audience is EA, SEPA, NRW personnel, construction industry workers, road and bridge maintenance workers.

This course offers a capability in still water only. People working in both still and moving water should complete the Safe Working in Water (SWIW) course.

Contact hours 12 hours (2 days)	Prerequisites Able to swim
Qualification valid for 3 years	Accredited by Rescue 3 Europe

Taught by

- Safe Working In Water Instructor (SWIWI)

Assessment

The assessed elements of this course are:

- Foundation knowledge
- Wading techniques in still water
- Still water swimming and self-rescue in buoyancy aids and lifejackets
- Throwbags and other conditional rescues in still water



Safe Working In Still Water (SWISW) skill sheet contents

Theory
1. About Rescue 3 Europe
2. Workplace legislation
3. Safe systems of work
4. Risk assessments
5. Pre-planning for emergencies and rescue
6. Still water hydrology and water hazards
7. Cold water considerations
8. Mud, ice and coastal considerations
9. Biosecurity and environmental considerations
10. Medical and decontamination considerations
11. Lifejackets vs. buoyancy aids
12. Buoyancy aid and lifejacket maintenance, periodic inspection and transportation
13. Lifejacket firing mechanisms
14. Lifejacket accidental inflation risks
15. Personal and team equipment
16. Considerations for night/poor visibility working
17. Communications
18. Entrapment considerations in still water
Practical
19. Pre- and post-use lifejacket checks
20. Lifejacket inflation and deflation - auto/manual
21. Still water swimming and self-rescue in lifejackets and/or buoyancy aids
22. Throwbags and other conditional rescues in still water
23. Wading techniques in still water
24. Tethered wading techniques in still water



Safe Working In Still Water (SWISW)

learning outcomes and key teaching points

	Skill sheet element		Learning outcome	Key teaching points
1	About Rescue 3 Europe	1.1	Recognise the role of Rescue 3 Europe as an accrediting body	Rescue 3 as an accrediting body. Designing safety and rescue courses – not just ‘rescue’
		1.2	Recognise the different industry training courses available within the Rescue 3 scheme	Courses for emergency services, whitewater professionals, construction workers, environment agency personnel, production crews etc
		1.3	Recall the remit and role of people trained to SWISW level	The Safe Working In Still Water (SWIW) course is designed for people tasked with working in still water who will need a self- and co-worker rescue capability using conditional rescue techniques, eg throwbags, wading techniques and reach poles. The target audience is EA, SEPA, NRW personnel, construction industry workers, road and bridge maintenance workers. This course offers a capability in still water only. People working in both still and moving water should complete the Safe Working in Water (SWIW) course. Recertification requirements
2	Workplace legislation	2.1	Recall local or national legislation that affects safe working near or in water	Generic health and safety legislation, eg Health and Safety and Work Act. Industry-specific, eg Construction Design and Management Regulations 2015. Equipment specific, eg Personal Protective Equipment at Work Regulations 1992



	Skill sheet element		Learning outcome	Key teaching points
3	Safe systems of work	3.1	Identify the elements of an effective safe system of work (method statement)	Hazard identification, risk assessment, method statement, rescue plan, permit to work, dynamic risk assessment, site/team briefing, operations, evaluation
4	Risk assessments	4.1	Identify the elements of an effective generic or site-specific risk assessment	Awareness of generic and site-specific risk assessment (5 stages)
		4.2	Identify the elements of an effective dynamic risk assessment	Real-time process ensuring actual situational risks are identified, evaluated and managed, that may not be covered by written risk assessment process
		4.3	Perform a dynamic risk assessment of a work site	Real-time process ensuring actual situational risks are identified, evaluated and managed, that may not be covered by written risk assessment process
5	Pre-planning for emergencies and rescues	5.1	Recall what information a worker will need to know when pre-planning for emergencies and rescues when working near still water	What'll happen if a worker falls in? Hazards and egress location. Who's going to rescue them/me? Alerting emergency services. Lone worker considerations. Co-worker rescue capability, including training, pre-positioning and access to rescue tools. Weather forecasts. Cold water immersion considerations – packaging eg survival bag, change of clothes
		5.2	Recall control measures to avoid accidents and emergencies in a still water environment	Training, PPE, on-site briefing. Co-worker rescue capability, including training, pre-positioning and access to rescue tools



	Skill sheet element		Learning outcome	Key teaching points
6	Still water hydrology and water hazards	6.1	Recall the definitions of still water, moving water, coastal water, swiftwater and whitewater	Still: flat water, eg lakes, ponds and canals. (Also known as basic water). Moving: flowing down a gradient, eg streams, rivers and drainage channels. Coastal: coastal sea, ocean, estuaries. Swiftwater: fast moving, steeper gradient, eg steep rivers, drainage channels, flash flood conditions. Whitewater: fast moving, steeper gradient, used for kayaking, rafting
		6.2	Identify the specific hazards associated with still water environments and understand how the lack of water movement influences hazard recognition and rescue planning	Lake/canal bed morphology, entrapments, canals/canal locks, debris. Misleading perception of safety in basic water. Reduced visibility and water clarity, eg water entry etc. Entrapment risks from vegetation and debris. Limited water movement affecting casualty drift/movement
		6.3	Identify general water hazards	Depth, temperature, weather
		6.4	Recognise the hazards associated with water management systems	Potential for water movement affecting water depth, movement or both. Eg penstocks, canal locks or similar features
		6.5	Recall hazards in moving water, beyond the remit of Safe Working in Still Water.	Undercuts, strainers, siphons, hydraulics, weirs, inspection covers, bridge pillars, entrapments.
		6.6	Recall importance of avoidance and control measures	The focus on this course (compared to SWNW) is for people who will intentionally enter still water
7	Cold water considerations	7.1	Recall signs and symptoms of cold water shock	Cold water shock. Reduced capability
		7.2	Recall coping strategies when faced with accidental immersion in cold water	1-10-1 rule. Appropriate PPE when working in water, eg drysuits with thermal layers, wetsuits



	Skill sheet element		Learning outcome	Key teaching points
8	Mud, ice and coastal considerations	8.1	Recall hazards associated with mud, ice and coastal environments and suitable control measures	Mud: Awareness, avoidance. What to do if you accidentally find yourself in mud eg spread weight, avoid standing. Estuaries, canals, dams, sediment etc. Cleaning/ decontamination issues. Ice: Awareness, avoidance. What to do if you find yourself on/in ice, eg 1-10-1, spreading weight, keeping low, getting out the same way you come in. Coastal: Tides, changes in water level, loss of access/egress, change of flow direction. Estuary mud flats
9	Biosecurity and environmental considerations	9.1	Identify areas of work where cross contamination, or introduction of invasive species may be possible and suitable control measures	Check, clean, dry. Cross-contamination. Decontamination. Consideration of invasive species. Pollution. Damage to flora and fauna. Reporting
10	Medical and decontamination considerations	10.1	Identify signs/symptoms and treatment for common medical issues found in a water environment	Hypothermia (too cold), hyperthermia (too hot), drowning, infection (eg leptospirosis, hepatitis), trauma eg bank hazards (slips, trips, falls), cold water shock
		10.2	Recall the importance of minimising exposure to the water and decontamination procedures post-exposure	Check, clean, dry. Hand wipes, face wipes, cover cuts etc
		10.3	Identify bank hazards and suitable control measures to prevent slips trips and falls	Wet, steep, slippery, muddy banks, overhanging branches, vegetation. Control measures: zoning, PPE and training



	Skill sheet element		Learning outcome	Key teaching points
11	Lifejackets vs. buoyancy aids	11.1	Identify differences between lifejackets and buoyancy aids	Explain difference between lifejacket and buoyancy aid. Buoyancy aid for planned entry to the water. Lifejacket for unplanned entry (ie worker falling in). Buoyancy aid doesn't roll an unconscious casualty. A lifejacket is designed to ensure that the wearer is floating in the correct position with their mouth and nose clear of the surface of the water. Different levels of buoyancy in lifejackets depending on work task and environment, eg 150N or 275N
		11.2	Identify national and international lifejacket and buoyancy aid standards	Applicable standards, eg ISO 12402
		11.3	Identify in which environments and for which work tasks lifejackets and buoyancy aids are appropriate and their pros and cons	Buoyancy aid for planned entry to the water. Lifejacket for unplanned entry (ie worker falling in). Consequence of accidentally entering the water, ie water, speed, obstacles, depth may need additional impact protection of a buoyancy aid. Ease of swimming in buoyancy aid, compared to difficulties in a lifejacket. No danger of accidental inflation in buoyancy aid. Buoyancy aid is less susceptible to sharps. Lifejackets unsuitable for an in-water co-worker rescue response



	Skill sheet element		Learning outcome	Key teaching points
12	Buoyancy aid and lifejacket maintenance, periodic inspection and transportation	12.1	Recall manufacturer's recommendations for rearming, maintenance and inspection of lifejackets and buoyancy aids	Manufacturer's recommendations for periodic inspection/servicing of lifejackets– eg returning to service centre/manufacturer. Manufacturer's rearming and maintenance guidelines. Periodic float testing of buoyancy aids. Bulkier to store and transport
		12.2	Recall agency or organisation's recommendations for rearming, maintenance and inspection of lifejackets and buoyancy aids where different from manufacturer's	Identifying where your organisation's recommendations may be stricter than manufacturer's requirements
		12.3	Compare the resilience to sharps of inflatable lifejackets vs. closed cell life jackets or buoyancy aids	Inflatable lifejackets vs. closed-cell foam
		12.4	Recall correct procedures for storage, transportation, and use of lifejackets and buoyancy aids to protect from sharps, exposure to chemicals and contamination	Transportation and storage considerations, including protection from sharps. Avoid exposure to chemicals. Check, clean, dry
13	Lifejacket firing mechanisms	13.1	Identify types of firing mechanism, their merits and limitations	Different types, eg Halkey-Roberts, United Moulders (UML Mark 5), Hammar. Expiry dates. Automatic firing cartridge, firing block, gas cylinder



	Skill sheet element		Learning outcome	Key teaching points
14	Lifejacket accidental inflation risks	14.1	Identify hazards associated with accidental deployment in a variety of high risk areas and tasks and suitable control measures	Wearing of lifejacket in correct environment. Don't wear below deck of boats. Don't wear in confined spaces. Don't wear in cabs/vehicles/ aircraft
		14.2	Identify the hazards and merits of auto vs. manual inflation in a variety of high risk areas and tasks	Don't wear auto-inflating lifejackets under clothing or under bags (eg rucksacks). Combination of lifejacket and a helmet and the risk posed with chin straps post-inflation
15	Personal and team equipment	15.1	Identify personal protective equipment (PPE) for working in still water	Likely equipment supplied by organisation. Personal equipment: Drysuit and thermal layers or wetsuit, footwear, helmets, knives, throwbags, buoyancy aid/lifejacket, gloves, sunglasses/eye protection
		15.2	Select appropriate PPE for working in and performing rescues in still water	Personal equipment: Drysuit and thermal layers or wetsuit, footwear, helmets, knives, throwbags, buoyancy aid/lifejacket, gloves, sunglasses/eye protection
		15.3	Perform a buddy check	Buddy check of co-worker
		15.4	Identify technical and team equipment for working near and performing rescues in still water	Team/other equipment: Throwbags, reach poles, floating aids, survival bags, group shelters, welfare packs, spare change of clothes
		15.5	Recall post-use care and inspection procedures for technical and team equipment	Check, clean, dry. Check hardware for cracks, burrs, damage, corrosion etc. Inspect textiles for fraying, cuts, exposure to chemicals, contamination



	Skill sheet element		Learning outcome	Key teaching points
16	Considerations for night/poor visibility working	16.1	Identify hazards associated with night/poor visibility operations and suitable control measures	Considerations for working at night. Hazards, visibility and communication difficulties, affecting timescales, tracking of equipment and workers. Lighting eg spotlights for the work site, personal lights/ headtorches/ Cyalume/ snaplights for workers and equipment. Buddy system. Increased use of audible communication
		16.2	Identify types of lighting used within night operations	Spotlights for the work site, personal lights, headtorches, Cyalume/ snaplights for workers and equipment
17	Communications	17.1	Recognise hand signals that can be used in a still water environment	Hand signals – OK, help, stop, direction, medical assistance
		17.2	Recognise whistle signals that can be used in a still water environment	Whistle signals – stop, emergency
		17.3	Identify other methods of communication and their limitations	Other methods of communication – radios, mobile phones. Benefits and limitations of each method, eg battery life, water resistance, signal strength
18	Entrapment considerations in still water	18.1	Identify the hazards and consequences of foot and body entrapments, and control measures to reduce likelihood.	Lake/pond/canal bed morphology, snag hazards, submersion, trauma. Conservative water entry techniques, in-water PPE (floatation), rescue equipment (knife), safe system of work (SSoW – chest release harness).
19	Pre- and post-use lifejacket checks	19.1	Demonstrate appropriate pre-use checks for the selected lifejacket	Pre-use: Correct fitting of selected lifejacket. Safety checks. Check automatic capsule. CO2 cylinder seals. Corrosion. Air holding properties. Firing head test without CO2 cylinder and automatic capsule in place. Check oral inflation cap
		19.2	Demonstrate appropriate post-use checks for the selected lifejacket	Post-use: General condition. Abrasion. Punctures. Corrosion



	Skill sheet element		Learning outcome	Key teaching points
20	Lifejacket inflation and deflation - auto/manual	20.1	Identify the hazards and merits of auto vs. manual inflation	Differences between auto and manual. Manual: Worker deployment required. Unsuitable for lone workers. Will not inflate if worker is unconscious. Auto: Speed of deployment. Risk of accidental deployment
		20.2	Observe the auto-inflation of a lifejacket, and identify the associated hazards	Observation of lifejacket auto-inflation
		20.3	Demonstrate manual inflation of a lifejacket	Performing manual inflation of a lifejacket
21	Still water swimming and self-rescue in lifejackets and/or buoyancy aids	21.1	Demonstrate swimming on back in a lifejacket in still water (If used by agency)	When and why. Swimmer can rest, can take a breath if there is fetch (waves). Keeps body position higher and possibly free of subsurface hazards. Difficulties of swimming in a lifejacket. Swimming on back is similar to the defensive position in a moving water environment.
		21.2	Demonstrate swimming on back to the bank in a lifejacket (if used by agency)	Practical session swimming to the side, eg of lake. Swimming on back is similar to the defensive position in a moving water environment.
		21.3	Demonstrate swimming on back in a buoyancy aid in still water	When and why. Swimmer can rest, can take a breath if there is fetch (waves). Keeps body position higher and possibly free of subsurface hazards. Swimming on back is similar to the defensive position in a moving water environment.
		21.4	Demonstrate swimming on front in a buoyancy aid in still water.	When and why. Rapid access. Faster swimming style. Swimming on front is similar to the aggressive swimming position in a moving water environment.
		21.5	Transition between swimming on front/back in a buoyancy aid.	Rolling techniques.



	Skill sheet element		Learning outcome	Key teaching points
22	Throwbags and other conditional rescues in still water	22.1	Identify conditional rescue options and the limitations of conditional rescues in still water	Conditional rescues rely on participation of the person in the water
		22.2	Identify, check and prepare suitable equipment for performing a conditional rescue in still water	Use of a reach pole or other reaching tools, eg paddle/branches etc. Use of throwbags, deployment
		22.3	Identify appropriate sites where conditional rescues from still water can be performed	Position for throw (safety of thrower, place to bring worker into safe area and onto dry land, avoiding trees and other overhead objects)
		22.4	Demonstrate the correct method for receiving a throwbag	Practical session in still water environment. Stay on back, make target/body as large as possible, keep line of sight with rescuer, listen to instructions. When being pulled in, don't wrap rope around body, hold rope close to chest, stay on back when being recovered. Don't let go of the rope until safely on bank.
		22.5	Perform a variety of conditional rescues in still water	Practical session in still water environment. Conditional rescues rely on participation of the person in the water. This session should include talking or encouraging the victim to swim to shore. Use of a reach pole or other reaching tools, eg paddle/branches etc. Use of throwbags, deployment. Type of throw (overhand, underhand)
23	Wading techniques in still water	23.1	Identify the variables and hazards that will directly affect wading techniques in still water	Identifying safe areas where wading techniques can be used: Water depth, bed morphology, personal equipment.
		23.2	Perform wading techniques in still water.	Individual, team, use of wading pole.



	Skill sheet element		Learning outcome	Key teaching points
24	Tethered wading techniques in still water	24.1	Explain the application of tethered wading techniques in still water	Use of tethered systems whilst working in water to negate the need for a conditional rescue if workers fall whilst wading in still water
		24.2	Perform a tethered wade in still water	Practical session in shallow still water





Flood Operations - Foundation (FO-F)

Course overview and target audience

The Flood Operations Foundation (FO-F) course meets the requirements laid out in the Defra Flood Rescue Concept of Operations, Annex H, Water & Flood Non-Rescue Support Operations Training Module. It is designed for workers from non-rescue organisations in flooding events. It also includes the syllabus from Defra Module 1 (Water and Flood Awareness).

Workers who want a higher capability in flooding events should take the full Flood Operations (FO) course, which includes a co-worker rescue capability.

Workers who operate near or in water, but not during flooding events, should take the Safe Working Near Water (SWNW) or Safe Working in Water course.

Members of the rescue and emergency services should take Water and Flood Awareness (AW - Mod 1), Swiftwater and Flood First Responder (SFR - Mod 2) or Swiftwater and Flood Rescue Technician (SRT - Mod 3) depending on the level of what they are tasked to do.

Contact hours 6 hours (1 days)	Prerequisites None
Qualification valid for 3 years	Accredited by Rescue 3 Europe

Taught by

- Swiftwater and Flood First Responder Instructor (SFRI)
- Swiftwater and Flood Rescue Technician Instructor (SRTI)
- Swiftwater and Flood Rescue Technician Advanced Water Instructor (SRTAWI)
- Swiftwater and Flood Rescue Technician Advanced Instructor (SRTAI)

Assessment

The assessed elements of this course are:

- Foundation knowledge
- Self-rescue from water
- Shallow water wading techniques



Flood Operations - Foundation (FO-F) skill sheet contents

Theory	
1. About Rescue 3	
2. Training standards	
3. Best practice guidelines for water	
4. Hydrology and water hazards	
5. Personal equipment	
6. Awareness of technical and team equipment	
7. Pre-planning	
8. Risk assessments	
9. Incident size-up considerations	
10. Incident management and site control	
11. Medical and decontamination considerations	
12. Considerations for night/poor visibility operations	
13. Mud, ice and unstable surface considerations	
14. Communications	
15. Accidental immersions considerations	
16. Considerations for conditional rescues in the role of a casualty	
17. Floodwater dynamics and hazards	
18. Flood theory	
Practical	
19. Self-rescue from water	
20. Shallow water wading techniques	



Flood Operations - Foundation (FO-F) learning outcomes and key teaching points

	Skill sheet element		Learning outcome	Key teaching points
1	About Rescue 3	1.1	Recall the steps required in order to develop judgement	Training. Practice. Experience. Judgement
		1.2	Explain the order of priorities during flooding events	Self > team > victim
2	Training standards	2.1	Recognise the different training courses within the Rescue 3 scheme	Industry-level courses, including those for industry operating near/in floods. Water rescue courses. Boat rescue courses. Rope rescue courses. Confined space rescue courses
		2.2	Recall the remit and role of an individual trained to this level	Flood Operations - Foundation (FO-F) remit and role. The Flood Operations Foundation (FO-F) course meets the requirements laid out in the Defra Flood Rescue Concept of Operations, Annex H, Water & Flood Non-Rescue Support Operations Training Module. It is designed for workers from non-rescue organisations in flooding events. It also includes the syllabus from Defra Module 1 (Water and Flood Awareness). Comparison of remit and role with FO, SWNW, SWIW, AW, SFR and SRT courses.
		2.3	State how the Rescue 3 scheme fits within national and international standards	Rescue 3 scheme, Defra, NFPA, applicable local standards
		2.4	State how the Rescue 3 scheme fits within agency policy and agency standard operating guidelines	Agency policy and agency standard operating guidelines
3	Best practice guidelines for water rescue	3.1	Explain how the Best Practice Guidelines for Water combine to produce safer working practice	Best Practice Guidelines for Water



	Skill sheet element		Learning outcome	Key teaching points
4	Hydrology and water hazards	4.1	Recall the definitions of basic water, moving water, coastal water, swiftwater and whitewater	Basic water - typically still, flat water, eg lakes, ponds, canals. Moving - flowing down gradient, eg streams, rivers, drainage channels. Coastal water - eg coastal sea, ocean, estuaries. Swiftwater - fast moving, steeper gradient, eg steep rivers, drainage channels, flash flood conditions. Whitewater - fast moving, steeper gradient, used for kayaking, rafting
		4.2	Identify the effect that volume, gradient and obstacles have on water	Volume - increase in energy. Gradient - increase in speed. Obstacles - creation of retentive water features, impact risk, siphon/strainer risk
		4.3	Identify water features	Laminar flow, helical flow, current vector, eddies, upstream V, downstream V, undercuts, strainers, siphons, standing waves, hydraulics, weirs
		4.4	Describe the impact water features would have on individuals in water	Force of water, river grading system, entrapments
		4.5	Identify general water hazards, and suitable control measures	Depth, temperature, weather
		4.6	Identify water hazards in a basic water environment, and suitable control measures	Lake/canal bed morphology, entrapments, canals/canal locks, debris
		4.7	Identify water hazards in a moving water environment, and suitable control measures	Volume, gradient, undercuts, strainers, siphons, hydraulics, weirs, inspection covers, bridge pillars, entrapments



	Skill sheet element		Learning outcome	Key teaching points
5	Personal equipment	5.1	Identify personal protective equipment (PPE) for working at flooding events	Helmet, buoyancy aid, lifejacket, drysuit, wetsuit, footwear, insulation, throwbags, waistbelts, cowstails, knives, lighting, eye protection, swim fins.
		5.2	Describe the issues and hazards of using non-water rescue PPE in the water	Drowning
6	Awareness of technical and team equipment	6.1	Recall technical and team equipment used by rescuers trained to a higher level	Karabiners, slings, tapes, throwbags, canyon lines, buoyant aids, swim fins, wading poles, reach pole, basket stretcher
7	Pre-planning	7.1	List the four components of a generic pre-plan	Management, personnel, training, equipment
		7.2	Identify sources of information useful for generic and task-/location-specific pre-planning	River level information, weather forecasts, dam releases, river guidebooks, mapping, emergency services, location of rescue and first aid equipment, post-rescue documentation
		7.3	Describe key information that should be included within a pre-plan	Site-specific risk assessment, general risk assessment, access and egress to site, topography, response plan
8	Risk assessments	8.1	Identify the elements of an effective generic or site-specific risk assessment	Identify the hazards, decide who might be harmed and how, evaluate the risks and decide on precaution, record your findings and implement them, review your assessment and update if necessary
		8.2	Identify the elements of an effective dynamic risk assessment	Real-time process ensuring actual situational risks are identified, evaluated and managed, that may not be covered by written risk assessment process.
		8.3	Perform a dynamic risk assessment of a water site	Real-time process ensuring actual situational risks are identified, evaluated and managed, that may not be covered by written risk assessment process.



	Skill sheet element		Learning outcome	Key teaching points
9	Incident size-up considerations	9.1	Recognise use of size-up models	CHALET and METHANE
		9.2	Recall the phases of a successful rescue	Locate. Access. Stabilise. Transport
		9.3	List rescue options	Talk, reach, throw, go, tow, helo. Not a hierarchy of risk
		9.4	Explain the difference between true and conditional rescues	Ability of victim to participate
10	Incident management and site control	10.1	Based on hazard recognition, apply appropriate control measures, including site zoning	Site zoning, chain of command, team roles
		10.2	Identify issues and hazards of bystanders beyond the cold zone	Crowd control, moral pressure, bystander safety
11	Medical and decontamination considerations	11.1	Identify signs/symptoms and treatment for common medical issues found in a water environment	Hypothermia, hyperthermia, drowning, infection eg Leptospirosis and hepatitis, trauma, cold water shock
		11.2	Identify individuals at risk for common medical issues found in a water environment, and control measures to minimise this	Workers, victims, rescuers. Hypothermia, hyperthermia (workers and rescuers), drowning, infection, trauma. Control measures - PPE, training, decontamination, team welfare.
		11.3	Recall the importance of minimising exposure to the water and decontamination procedures post-exposure	Decontamination including hand wipes, face wipes, decontamination spray
		11.4	Identify bank hazards, and suitable control measures to prevent slips, trips and falls	Work site assessment, appropriate footwear, site zoning, safety briefing
12	Considerations for night/poor visibility operations	12.1	Identify hazards associated with night/poor visibility operations, and suitable control measures	Hazards: visibility and communication difficulties, affecting timescales, tracking of equipment and personnel. Control measures: Lighting, increased use of audible communication
		12.2	Identify types of lighting used within night operations	Snap lights, personal lights, scene lights, night vision goggles



	Skill sheet element		Learning outcome	Key teaching points
13	Mud, ice and unstable surface considerations	13.1	Recall hazards associated with mud, ice and unstable surfaces, and suitable control measures	Entrapment, contamination, specialised rescue equipment, ice quality/strength/thickness, temperature, access issues
		13.2	Identify equipment and techniques used within swiftwater operations that would have application within mud, ice and unstable surface operations	PPE, boats, sleds and inflatable platforms, reach tools including throwbags
14	Communications	14.1	Recognise hand signals that can be used in a water environment	Ok, help, stop, direction, medical assistance
		14.2	Recognise whistle signals that can be used in a water environment	Stop, upstream, downstream, emergency
		14.3	Identify other methods of communication and their limitations	Radios, mobile telephones, battery life, water resistance, signal strength
15	Accidental immersion considerations	15.1	Identify hazards and control measures of accidental immersion in water	Temperature, entrapment possibilities, PPE failure, injury
		15.2	Recognise the importance of keeping feet up if swept away in moving water	Entrapment risk, impact injury, line of sight, ability to receive a throwline
16	Considerations for conditional rescues in the role of a casualty	16.1	Identify conditional rescue options and the limitations of conditional rescues	Conditional rescues rely on participation of the person in the water.
		16.2	Recall suitable equipment used for conditional rescues	Reach pole or other reaching tools, eg paddle/branches etc. Throwbags.
		16.3	Recall the correct method for receiving a throwbag	Stay on back, make target/body as large as possible, keep line of sight with rescuer, listen to instructions. When being pulled in, don't wrap rope around body, rope over shoulder, stay on back when being recovered. Don't let go of rope until safely on bank



	Skill sheet element		Learning outcome	Key teaching points
17	Floodwater dynamics and hazards	17.1	Identify the physical impact of water flowing within an urban area	Speed of water, flash flood, expansion, recovery, urban and roadside furniture including manhole covers, erosion, subsidence, storm drains
		17.2	Identify contributing factors to physical, chemical and biological hazards within flooding	Electricity, gas, LPG and oil tanks, sewage, household waste, industrial chemicals, pesticides, fertilisers, slurry pits, septic tanks, dead animals
		17.3	Explain the effect of physical, chemical and biological hazards on personnel in floodwater	Appropriate PPE, training, medical and decontamination
18	Flood theory	18.1	Identify the four phases of a flood, and the associated hazards	Pre-flood. Flash flood. Expansion. Recovery. Phase-specific hazards
		18.2	Identify how flood warnings will correspond with phases of flooding	European Flood Awareness System (EFAS), national flood information
		18.3	State what tasks an individual trained to this level would carry out during the phases of a flooding event	FO-F remit and role in flood events



	Skill sheet element		Learning outcome	Key teaching points
19	Self rescue from water	19.1	Demonstrate the defensive swimming position.	Importance of defensive swimming position. Difficulties of swimming in a lifejacket compared to buoyancy aid.
		19.2	Demonstrate the aggressive swimming position.	When and why, body positioning, lateral movement, breaking out of the flow where applicable.
		19.3	Transition between the defensive and aggressive swimming positions	Rolling techniques, entrapment issues, increased risk of impact on in-water features
		19.4	Adjust body angle relative to the current vector, where applicable.	In the defensive and aggressive swimming positions.
		19.5	Demonstrate setting correct angles in the current to defensively swim to the bank.	Practical session includes setting of correct body angle in defensive position, and swimming to the side.
		19.6	Identify hazards that affect a swimmer trying to exit a river	Difficulties to self-rescue when wearing a lifejacket compared to BA. Where to get out – steepness of bank, and river bank strainers, depth and flow rate of river etc. Slips, trips and falls. Sharp objects near river bank.
		19.7	Demonstrate safe exit from water	Practical session exiting water.
20	Shallow water wading techniques	20.1	Identify the variables and hazards that will directly affect shallow water techniques.	Identifying safe areas where shallow water techniques can be used: Depth, water speed, river bed morphology.
		20.2	Perform single and team-based shallow water techniques.	Single with wading pole, line astern, wedge. Foot placement and use of wading poles to scout for entrapment hazards





Flood Operations (FO)

Course overview and target audience

The Flood Operations course has been designed in conjunction with UK district councils and the UK Environment Agency. The aim is to provide emergency planners and emergency workers with the necessary knowledge and techniques to enable them to assess and work in flood environments. The course is a mixture of theory input and in-water practical sessions.

Contact hours 12 hours (2 days)	Prerequisites Must be a confident swimmer. Minimum age: 18
Qualification valid for 3 years	Accredited by Rescue 3 Europe

Taught by

- Swiftwater and Flood First Responder Instructor (SFRI)
- Swiftwater and Flood Rescue Technician Instructor (SRTI)
- Swiftwater and Flood Rescue Technician Advanced (Water) Instructor (SRTAWI)
- Swiftwater and Flood Rescue Technician Advanced (Water and Rope) Instructor (SRTAI)

Assessment

The assessed elements of this course are:

- Foundation knowledge
- Swiftwater swimming techniques
- Shallow water techniques
- Throwbags



Flood Operations (FO) skill sheet contents

1. Theory
2. Rescue 3 philosophy
3. Training standards
4. Best practice guidelines for water rescue
5. Personal protective equipment
6. Water and flood dynamics and hazards
7. Risk assessment
8. Health and safety brief
9. Flood theory
10. Pre-planning
11. Medical considerations
12. Considerations for night/poor visibility operations
13. Practical
14. Defensive and aggressive swimming
15. Conditional rescues - talk, reach, throw
16. Shallow water techniques
17. Foot and body entrapments
18. Boat/sleds options (if used by agency)

'If used by agency' skills must be taught if a student's agency uses these skills operationally. Otherwise, they may be omitted by the training provider.



Flood Operations (FO) learning outcomes and key teaching points

	Skill sheet element		Learning outcome	Key teaching points
1	Rescue 3 philosophy	1.1	Recall the steps required in order to develop judgement	Training. Practice. Experience. Judgement
		1.2	Explain the order of priorities at a water rescue scene	Self > team > victim
2	Training standards	2.1	Recognise the different training courses within the Rescue 3 scheme	Industry-level courses. Water rescue courses. Boat rescue courses. Rope rescue courses. Confined space rescue courses
		2.2	Recall the remit and role of an individual trained to this level	Flood Operations (FO) remit and role
		2.3	State how the Rescue 3 scheme fits within national and international standards	Rescue 3 scheme, Defra, NFPA, applicable local standards
		2.4	State how the Rescue 3 scheme fits within agency policy and agency standard operating guidelines	Agency policy and agency standard operating guidelines
3	Best practice guidelines for water rescue	3.1	Apply the Best Practice Guidelines for Water Rescue combine to produce safer working practice	Best Practice Guidelines for Water Rescue (formerly known as 15 Absolutes)
4	Personal equipment	4.1	Identify the hazards of working in a flood environment	Temperature related, trauma, drowning and hazmat
		4.2	Identify PPE that will help protect against the hazards of working in a flood environment	Helmet, buoyancy aid, lifejacket, drysuit, wetsuit, footwear, insulation, knives, throwbags, gloves, waistbelts, cowstails, lighting, eye protection, first aid kits, swim fins
		4.3	Select appropriate PPE for operating and performing rescues in water, perform pre-use checks, donning and buddy checks	CE standards, PPE inspection, buddy checks
		4.4	Recall post-use care and inspection procedures for personal equipment	PPE inspection, drying, storage and care



	Skill sheet element		Learning outcome	Key teaching points
5	Water and flood dynamics and hazards	5.1	Identify the features created by water flowing within an urban area and the hazards associated with them	Current vector, changes of water speed and depth, waves and hydraulics, urban strainers, manholes and drains
		5.2	Identify contributing factors to physical, chemical and biological hazards within flooding	Hazmat such as electricity, gas, LPG and oil tanks, sewage, household waste, industrial chemicals, pesticides, fertilisers, slurry pits, septic tanks, dead animals
		5.3	Explain the effect of physical, chemical and biological hazards on personnel in floodwater	Appropriate PPE, training, medical and decontamination
6	Risk assessments	6.1	Identify the elements of an effective dynamic risk assessment	Identify the hazards, decide who might be harmed and how, evaluate the risks and decide on precaution, implement your findings
		6.2	Perform a dynamic risk assessment of a rescue site	Identify the hazards, decide who might be harmed and how, evaluate the risks and decide on precaution, implement your findings
7	Health and safety brief	7.1	Perform an on-site safety brief based on risk assessment	Highlight relevant hazards and control measures for operations
8	Flood theory	8.1	Identify the four phases of a flood, and the associated hazards	Pre-flood. Flash flood. Expansion. Recovery. Phase-specific hazards
		8.2	Identify how flood warnings will correspond with phases of flooding	European Flood Awareness System (EFAS), national flood information
		8.3	State what tasks an individual trained to this level would carry out during the phases of a flooding event	FO remit and role in flood events



	Skill sheet element		Learning outcome	Key teaching points
9	Pre-planning	9.1	List the four components of a generic pre-plan	Management, personnel, training, equipment
		9.2	Identify sources of information useful for generic and task-/location-specific pre-planning	River level information, weather forecasts, dam releases, river guidebooks, flood mapping, emergency services, location of rescue and first aid equipment, post-rescue documentation
		9.3	Describe key information that should be included within a pre-plan	Site-specific risk assessment, general risk assessment, access and egress to site, topography, response plan
10	Medical considerations	10.1	Identify signs/symptoms and treatment for common medical issues found in a water environment	Hypothermia, hyperthermia, drowning, infection eg Leptospirosis and hepatitis, trauma, cold water shock
		10.2	Identify individuals at risk for common medical issues found in a water environment, and control measures to minimise this	Victims in and around the water environment - hypothermia, drowning, infection, trauma. Rescuers - hypothermia, hyperthermia, drowning, infection, trauma. Control measures - PPE, training, decontamination, team welfare
		10.3	Recall the importance of minimising exposure to the water and decontamination procedures post-exposure	Decontamination including hand wipes, face wipes, decontamination spray
		10.4	Identify bank hazards, and suitable control measures to prevent slips, trips and falls	Rescue site assessment, appropriate footwear, site zoning, safety briefing
11	Considerations for night/poor visibility operations	11.1	Identify hazards associated with night/poor visibility operations, and suitable control measures	Hazards: visibility and communication difficulties, affecting timescales, tracking of equipment and personnel. Control measures: Lighting, increased use of audible communication
		11.2	Identify types of lighting used within night operations	Snap lights, personal lights, scene lights, night vision goggles



	Skill sheet element		Learning outcome	Key teaching points
12	Defensive and aggressive swimming	12.1	Demonstrate the defensive swimming position	When and why, body positioning, lateral movement, breaking out of the flow
		12.2	Demonstrate the aggressive swimming position	When and why, body positioning, lateral movement, breaking out of the flow
		12.3	Transition between the defensive and aggressive swimming positions	Rolling techniques, entrapment issues, increased risk of impact on in-water features
		12.4	Adjust body angle relative to the current vector	Ferry angles, methods of adjusting body angle
		12.5	Apply swimming techniques, angle control and momentum to perform a variety of tasks	Defensive swimming, aggressive swimming, transition from defensive to aggressive, ferry gliding, eddy line techniques, slalom course, breathing techniques, water-reading skills. Increasing and decreasing momentum



	Skill sheet element		Learning outcome	Key teaching points
13	Conditional rescues - talk, reach, throw	13.1	Identify conditional rescue options and the limitations of conditional rescues	Talk. Reach. Throw. Victim participation required
		13.2	Identify, check and prepare suitable equipment for performing a conditional rescue	Talk. Reach - pole, paddle, throwbag. Throw - buoyant object, eg life ring
		13.3	Identify appropriate sites where conditional rescues can be performed	Appropriate eddies. Obstructions and hazards in the water and on the banks
		13.4	Demonstrate the correct method for receiving a throwbag	Stay on back, make target/body as large as possible, keep line of sight with rescuer, listen to instructions. When being pulled in, don't wrap rope around body, rope over shoulder, stay on back when being recovered. Don't let go of rope until safely on bank
		13.5	Perform a variety of conditional rescues	Talk rescues. Reach rescue - reach pole, throwbag
		13.6	Identify methods of managing force directed on rescuer and victim as water speed increases	Rescuer/ belayer moving downstream or paying out line to manage load. Moving sideways or pulling in line to bring the casualty across the current vector. Appropriate site choice and eddies for recovery
14	Shallow water techniques	14.1	Identify the variables and hazards that will directly affect shallow water techniques	Water speed, depth, channel bed morphology, personnel, equipment
		14.2	Perform single and team-based shallow water techniques	Individual, line astern, line abreast, wedge, use of wading pole
		14.3	Explain the application of tethered shallow water techniques	Single and group tethered techniques



	Skill sheet element		Learning outcome	Key teaching points
15	Foot and body entrapments	15.1	Identify the hazards and consequences of foot and body entrapments, and control measures to reduce likelihood	River bed morphology, snag hazards, submersion, trauma. Defensive swimming position. Training
		15.2	Identify extrication methods of an entrapped casualty	Hands-on methods, wading, single bank access, twin bank access
		15.3	Identify risks to the rescuers of an entrapped casualty	Access difficulties, river bed morphology, snag hazards, river depth, upstream vs. downstream access, access to both banks, hands-on techniques, wading vs. access from bank, timescales involved in performing a rescue
		15.4	On dry land, demonstrate use of stabilisation line from one and two banks	Single and twin bank entrapment techniques. A stabilisation line might be needed even after rescuers have accessed and got hands on the casualty
16	Boat/sled options (if used by agency)	16.1	Use a boat/sled as a platform for transporting equipment or welfare supplies	Wading and simple tether systems (resettable pendulum) for moving a boat around in the water
		16.2	Identify advantages and disadvantages of different techniques for moving sleds/boats around in the water	Creating extra space, lightening the load, more/less exposure, more/less time consuming



Work Boat Operator (WBO)

Course overview and target audience

This course is designed for workers with little or no powerboat experience who wish to attain an inland boat handling and co-worker rescue capability on flat or slow moving water.

The target audience includes construction industry workers, road and bridge maintenance workers, and their related standby safety crews.

Contact hours 12 hours (2 days)	Prerequisites None
Qualification valid for 3 years	Accredited by Rescue 3 Europe

Taught by

- Work Boat Operator Instructor (WBOI)

Assessment

The assessed elements of this course are:

- Foundation knowledge
- Work boat handling under power
- Work boat handling with paddles
- Worker recovery into boat
- Contact rescues



Work Boat Operator (WBO) skill sheet contents

Theory	
1. About Rescue 3 Europe	
2. Workplace legislation	
3. Safe systems of work	
4. Risk assessments	
5. Pre-planning for emergencies	
6. Water hazards	
7. Personal equipment (PPE)	
8. Work boat equipment	
9. Work boat hull and drive types	
10. Pre- and post-work boat checks	
11. Communications	
12. Work boat crew roles	
13. Navigation and IRPCS considerations for work boats	
14. Considerations for working at night or in poor visibility	
15. Biosecurity and environmental considerations	
16. Medical and decontamination considerations	
Practical	
17. Launching and recovery	
18. Work boat handling under power	
19. Work boat handling with paddles	
20. Towing	
21. Anchoring/securing of work boats	
22. Individual and co-worker recovery into boat	
23. Casualty management	
24. Boat-based conditional rescues	
25. Contact rescues	



Work Boat Operator (WBO) learning outcomes and key teaching points

	Skill sheet element		Learning outcome	Key teaching points
1	About Rescue 3 Europe	1.1	Recognise the role of Rescue 3 Europe as an accrediting body	Rescue 3 as an accrediting body. Designing safety and rescue courses – not just ‘rescue’
		1.2	Recognise the different industry training courses available within the Rescue 3 scheme	Courses for emergency services, whitewater professionals, construction workers, environment agency personnel, production crews etc
		1.3	Recall the remit and role of people trained to WBO level	This course is designed for workers with little or no powerboat experience who wish to attain an inland boat handling and co-worker rescue capability on flat or slow moving water. The target audience includes construction industry workers, road and bridge maintenance workers, and their related standby safety crews. Recertification requirements
2	Workplace legislation	2.1	Recall local or national legislation that affects safe working near or in water	Generic health and safety legislation, eg Health and Safety and Work Act. Industry-specific, eg Construction Design and Management Regulations 2015. Equipment specific, eg Personal Protective Equipment at Work Regulations 1992
3	Safe systems of work	3.1	Identify the elements of an effective safe system of work (method statement)	Hazard identification, risk assessment, method statement, rescue plan, permit to work, dynamic risk assessment, site/team briefing, operations, evaluation



	Skill sheet element		Learning outcome	Key teaching points
4	Risk assessments	4.1	Identify the elements of an effective generic or site-specific risk assessment	Awareness of generic and site-specific risk assessment (5 stages)
		4.2	Identify the elements of an effective dynamic risk assessment	Real-time process ensuring actual situational risks are identified, evaluated and managed, that may not be covered by written risk assessment process
		4.3	Perform a dynamic risk assessment of a work boat working area	Real-time process ensuring actual situational risks are identified, evaluated and managed, that may not be covered by written risk assessment process
5	Pre-planning for emergencies	5.1	Recall what information a work boat operator will need to know when pre planning for emergencies when working	What will happen if I or somebody else falls out of the boat? What will happen if a co-worker falls in from the bank/bridge. Downstream hazards, distance access/egress points. Alerting emergency services. Weather forecasts. Cold water immersion considerations – packaging eg survival bag, change of clothes
6	Water hazards	6.1	Identify water hazards in a basic water environment	Flat water hazards, entrapment hazards, muddy bottoms to lakes and canals
		6.2	Identify water hazards in a moving water environment	Fast current. Bends in the river. Undercuts. Strainers. Siphons. Stoppers. Weirs. Structures, eg scaffolding, bridge pillars etc. Identifying and understanding current vector
		6.3	Recall importance of avoidance and control measures	The focus on this course should be how water hazards affect both workers who have fallen in and an operational boat crew tasked with the worker's rescue



	Skill sheet element		Learning outcome	Key teaching points
7	Personal equipment (PPE)	7.1	Identify differences between lifejackets and buoyancy aids and appropriate environments for their use	Explain difference between lifejacket and buoyancy aid. Buoyancy aid for planned entry to the water. Lifejacket for unplanned entry (ie worker falling in). Consequence of accidentally entering the water (water speed, obstacles, depth) may need additional impact protection of a buoyancy aid. Buoyancy aid doesn't roll an unconscious casualty. A lifejacket is designed to ensure that the wearer is floating in the correct position with their mouth and nose clear of the surface of the water. Ease of swimming in buoyancy aid, and recovery into boat compared to difficulties in a lifejacket. No danger of accidental inflation in buoyancy aid. Buoyancy aid is less susceptible to sharps. Different levels of buoyancy in lifejackets depending on work task and environment, eg 150N or 275N
		7.2	Identify national and international lifejacket and buoyancy aid standards	Applicable standards, eg ISO 12402
		7.3	Identify appropriate PPE for use when operating a Work boat	Explain appropriate PPE for work boat crews. Use of appropriate helmets, eye protection from spray and sun, throwbag, drysuit, boots, gloves, thermal layers, spare kill cord. Considerations for wearing a helmet when wearing a buoyancy aid



	Skill sheet element		Learning outcome	Key teaching points
8	Work boat equipment	8.1	Identify appropriate work boat equipment that should be carried in the boat	Boat kit: Engine, prop guard. 2 separate fuel bladders. Keys, kill cord and spares. Paddles. Navigation equipment, eg maps, charts, sat nav, GPS. Fire extinguisher. First aid kit. Comms. Lighting for boat. Bowline. Pump. Tools, repair kit and spares. Towing kit. Anchor. Inshore flare pack
		8.2	Identify appropriate rescue equipment that should be carried in the boat	Technical rescue equipment: semi-static floating line, slings/tapes, karabiners, rope grabs, pulleys. Welfare pack. Throwbag. Task specific: Stretcher, ladder, additional long lines, O2, defib
9	Work boat hull and drive types	9.1	Recall how different boat sizes and hull types affect their handling and resistance to damage	How does weight and size of boat affect its handling characteristics. Resilience to damage
		9.2	Identify how different drive types can affect handling and fuel consumption of work boats including pros and cons	Manoeuvrability, acceleration and fuel efficiency. 2 stroke/4 stroke. Props, prop guards and jet drives advantages and disadvantages



	Skill sheet element		Learning outcome	Key teaching points
10	Pre- and post-work boat checks	10.1	Perform systematic checks of boat/hull, fuel and engine system, and auxiliary equipment	Work boat checks that need to be completed before and after use. Obvious holes, wear or damage. Boat pressure. Fuel leakage. Linkages: gear and throttle. Prop damage and split pin. Prop guard Fuel: enough quantity for work task, good quality fuel connections. Kill cord condition. Ensure neutral engages
		10.2	Prepare equipment in order to give a clean working space within the boat	All equipment secured into the boat
		10.3	Run through pre-start checks prior to starting engine	Obvious holes, wear or damage. Boat pressure. Fuel leakage. Linkages: gear and throttle. Prop damage and split pin. Prop guard. Fuel: enough quantity for work task, good quality fuel connections. Kill cord condition. Ensure neutral engages
		10.4	Perform post-trip checks	Post use checks for damage, flush engine through with clean water
11	Communications	11.1	Communicate boat-to-boat and boat-to-shore using hand and whistle signals	Boat specific hand signals: Ok, distress, point positive, medical, hold station. Whistle: attention, upstream, downstream, distress
		11.2	Apply simple commands in order to centralise command within the boat	Commands for changing trim, tying or untying the boat, exiting or entering the boat should all come from the helm
		11.3	Recall other communication options	Use of radios and pros and cons: signal, range, battery life, waterproofness
12	Work boat crew roles	12.1	Explain the primary roles of helm, bowman and rescuer within a rescue boat, and their duties	Helm: overall control, clear comms. Bowman: directions (points positive) and information for the helm. Rescuer: hands on casualty
		12.2	Apply crew roles when performing a variety of tasks	Clear communication and allocation of roles



	Skill sheet element		Learning outcome	Key teaching points
13	Navigation and IRPCS considerations for work boats	13.1	Apply International Regulations for the Prevention of Collisions at Sea (IRPCS) in order to safely operate work boat	A clear understanding of the rules of the road. Head on situation: pass port to port (steer right). Give way to the right. Power gives way to unpowered craft
		13.2	Orient map to ground and identify how water level changes will affect information represented on map/chart	Loss or gain of access with changes of water level, river or estuary/tidal
		13.3	Using an appropriate information source, identify tick features that will be seen en route	Passage plan. Return to last point if visibility or comms are lost
		13.4	Using a map/chart, confirm when at an objective	Three reasons that confirm your position. Use of sat nav
		13.5	Use stop/catch features when planning a route or work area	Large features that identify the end of a working area
14	Considerations for working at night or in poor visibility	14.1	Identify problems associated with hazard recognition, group control and application of safety standby and rescue techniques during night/poor visibility operations	Difficulties of working at night or in poor visibility. Depth perception. Comms. Line of sight. Awareness of speed over ground. Water depth. Debris. Slower travelling speeds
		14.2	Identify control measures that may be required when operating work boats in darkness or poor visibility	Personal, scene and boat lighting. Buddy system and roll call. Optional practical night exercise: simple scenarios to appreciate difficulties of working at night
15	Biosecurity and environmental considerations	15.1	Identify areas of work where cross contamination, or introduction of invasive species may be possible and suitable control measures	Check, clean, dry. Cross-contamination. Decontamination. Consideration of invasive species. Pollution. Damage to flora and fauna. Reporting



	Skill sheet element		Learning outcome	Key teaching points
16	Medical and decontamination considerations	16.1	Identify signs/symptoms and treatment for common medical issues found in a water environment	Hypothermia (too cold), hyperthermia (too hot), drowning, infection (eg leptospirosis, hepatitis), trauma eg bank hazards (slips, trips, falls), cold water shock
		16.2	Recall the importance of minimising exposure to the water and decontamination procedures post-exposure	Check, clean, dry. Hand wipes, face wipes, cover cuts etc
		16.3	Identify bank hazards and suitable control measures to prevent slips trips and falls	Wet, steep, slippery, muddy banks, overhanging branches, vegetation. Control measures: zoning, PPE and training
17	Launching and recovery	17.1	Identify considerations when launching and recovering via trailer	Discuss launching and recovery options and difficulties, including terrain, vehicle access
		17.2	Identify hand launch considerations, including manual handling	Options to move or carry boat to launch site as a whole or to move engine, boat and equipment separately. Manual handling issues
		17.3	Identify how changing conditions and deployment will affect launching/ recovery site choice	Effects of water levels. Time pressures. Remaining daylight, weather



	Skill sheet element		Learning outcome	Key teaching points
18	Work boat handling under power	18.1	Identify the importance of trim when in displacement and planing mode, and use crew in order to apply trim	Basic boat handling in flat or slow moving water. Effects of weight shift forward or backwards and side to side
		18.2	Be able to control momentum when travelling forwards and in reverse, identifying how changes in drive and trim affect steerage and pivot of boat	Basic boat handling in flat or slow moving water. Appropriate space to manoeuvre, allowing for drift and amount of tiller lock
		18.3	Be able to change direction of the boat at speed in wider areas and low speed in confined areas	Basic boat handling in flat or slow moving water. Appropriate space to manoeuvre, allowing for drift and amount of tiller lock
		18.4	Manage boat and crew when coming to or leaving shallow areas, buoy/moorings, and other vessels	What communication should come from the helm.
		18.5	Explain the terms ground speed and water speed, and why they are important with boat handling	Using markers on land to check speed over ground
		18.6	Be able to hold station in a flat or slow-moving environment	Hold position in the flow. No upstream/downstream or side to side movement. Prevent drift, no accidental movement
19	Workboat handling with paddles	19.1	Identify application for paddle skills	When and why might paddles be needed? Loss of engine, shallow water access, too much debris, prop clogged
		19.2	Identify the importance of correct trim and power distribution	Importance of timing of paddle strokes and trim for efficiency
		19.3	Be able to paddle forwards, backwards and turn	Basic boat handling with paddles in flat or slow moving water
		19.4	Recognise the importance of applying angle before momentum	Time it takes to generate momentum. Awareness of boat spin
		19.5	Apply simple command within the boat in order to achieve simple objectives	Planning for future water. One person takes charge. Specific paddle commands



	Skill sheet element		Learning outcome	Key teaching points
20	Towing	20.1	Perform both line astern and alongside tows	Towing of boats, pontoons, other work equipment
		20.2	Identify variables that influence choice between line astern and alongside tows	Different methods of towing, in line, side by side etc, advantages/disadvantages, application of methods
		20.3	Identify areas that will require management when towing	Space to manoeuvre. Distance to travel. Water conditions Fuel usage, damage to vessels, tensioned lines and weight distribution
21	Anchoring/securing of work boats	21.1	Identify why anchoring/securing a work boat would be required	Reasons to anchor or secure a work boat, casualty recovery. Downstream containment
		21.2	Recognise types of tethers/anchors depending on area, boat size and design	Size of anchor and type river bed composition, eg mud, gravel, rocky
		21.3	Perform deployment, including measurement of depth and checks to ensure anchor is holding	Space: allow for swing with current or tide
22	Individual and co-worker recovery into boat	22.1	Identify reasoning behind team/self-rescue ability	Who needs to be recovered? Crew member? Co-worker from bank or bridge? Injuries? Ability to self-rescue reduces task loading on other crew members
		22.2	Perform team-based rescue (or self-rescue) over sponson whilst in deep water	Recovery techniques into boat for crew members, self recovery techniques, assistance from co-crew members. Boat set up: handles, safety line, size of sponsons which help self-recovery



	Skill sheet element		Learning outcome	Key teaching points
23	Casualty management	23.1	Identify priorities for casualty care	Casualty considerations and assessment: Breathing, temperature and major trauma
		23.2	Describe how casualty care would impact on boat handling, length of transit and operation	Reduced capability of helm and crew. More load will affect engine performance
		23.3	Identify suitable placement of casualty once aboard and how medical stabilisation would influence this	Feet up or feet down considerations, temperature concerns: compression of packaging by wind
24	Boat-based conditional rescues	24.1	Identify how addition of conditional rescue tools will aid the helm's margin for error	Use of paddle or throwline to prevent the need to drive too close to victim under power
		24.2	Identify environmental and casualty variables that will influence the choice of rescue	Is casualty conscious/unconscious? What in-water hazards could affect the casualty and work boat? Eg turbulent water, rocks, waves, weirs
		24.3	Perform conditional rescues from a boat, applying control measures in order to reduce risk to personnel and casualty	Practical session in flat or slow moving water. Importance of rope management in boats to avoid entrapment hazards for crew. Engine neutral or off?
25	Contact rescues	25.1	Allocate roles for casualty pick-up and recovery	Rescuer and bowman's position should not obscure the helm's view
		25.2	Use environmental factors in order to make a controlled approach	Casualty or co-worker pick up: Approach into the strongest element: wind or flow
		25.3	Manage the hazard of the engine and the casualty in the water	Helm must use neutral or engine off, depending on consequences of drift, to protect people in the water. Tiller should be pushed away from the casualty
		25.4	Recover casualties into boat using forwards- and backwards-facing techniques, and rolling	Method of recovery should be based on water speed, depth and hazards, and the nature of the casualty's injuries



Work Boat Operator - Non-Motorised (WBO-NM)

Course overview and target audience

This course is designed for workers with little or no paddleboat experience who wish to attain an inland non-motorised workboat handling and co-worker rescue capability on flat or slow moving water.

The target audience includes construction industry workers, road and bridge maintenance workers, and their related standby safety crews.

Contact hours 12 hours (2 days)	Prerequisites None
Qualification valid for 3 years	Accredited by Rescue 3 Europe

Taught by

- Swiftwater Paddleboat Handling Instructor (SPBHI)

Assessment

The assessed elements of this course are:

- Foundation knowledge
- Work boat handling with paddles
- Worker recovery into boat
- Contact rescues



Work Boat Operator - Non-Motorised (WBO-NM) skill sheet contents

Theory
1. About Rescue 3 Europe
2. Workplace legislation
3. Safe systems of work
4. Risk assessments
5. Pre-planning for emergencies
6. Water hazards
7. Personal equipment (PPE)
8. Work boat equipment
9. Work boat hull types
10. Pre- and post-work boat checks
11. Communications
12. Work boat crew roles
13. Navigation and IRPCS considerations for work boats
14. Considerations for working at night or in poor visibility
15. Biosecurity and environmental considerations
16. Medical and decontamination considerations
Practical
17. Launching and recovery
18. Work boat handling with paddles
19. Towing
20. Anchoring/securing of work boats
21. Individual and co-worker recovery into boat
22. Casualty management
23. Boat-based conditional rescues
24. Contact rescues



Work Boat Operator - Non-Motorised (WBO-NM) learning outcomes and key teaching points

	Skill sheet element		Learning outcome	Key teaching points
1	About Rescue 3 Europe	1.1	Recognise the role of Rescue 3 Europe as an accrediting body	Rescue 3 as an accrediting body. Designing safety and rescue courses – not just ‘rescue’
		1.2	Recognise the different industry training courses available within the Rescue 3 scheme	Courses for emergency services, whitewater professionals, construction workers, environment agency personnel, production crews etc
		1.3	Recall the remit and role of people trained to WBO-NM level	This course is designed for workers with little or no paddleboat experience who wish to attain an inland non-motorised workboat handling and co-worker rescue capability on flat or slow moving water. The target audience includes construction industry workers, road and bridge maintenance workers, and their related standby safety crews. Recertification requirements
2	Workplace legislation	2.1	Recall local or national legislation that affects safe working near or in water	Generic health and safety legislation, eg Health and Safety and Work Act. Industry-specific, eg Construction Design and Management Regulations 2015. Equipment specific, eg Personal Protective Equipment at Work Regulations 1992
3	Safe systems of work	3.1	Identify the elements of an effective safe system of work (method statement)	Hazard identification, risk assessment, method statement, rescue plan, permit to work, dynamic risk assessment, site/team briefing, operations, evaluation



	Skill sheet element		Learning outcome	Key teaching points
4	Risk assessments	4.1	Identify the elements of an effective generic or site-specific risk assessment	Awareness of generic and site-specific risk assessment (5 stages)
		4.2	Identify the elements of an effective dynamic risk assessment	Real-time process ensuring actual situational risks are identified, evaluated and managed, that may not be covered by written risk assessment process
		4.3	Perform a dynamic risk assessment of a work boat working area	Real-time process ensuring actual situational risks are identified, evaluated and managed, that may not be covered by written risk assessment process
5	Pre-planning for emergencies	5.1	Recall what information a work boat operator will need to know when pre planning for emergencies when working	What will happen if I or somebody else falls out of the boat? What will happen if a co-worker falls in from the bank/bridge. Downstream hazards, distance access/egress points. Alerting emergency services. Weather forecasts. Cold water immersion considerations – packaging eg survival bag, change of clothes
6	Water hazards	6.1	Identify water hazards in a basic water environment	Flat water hazards, entrapment hazards, muddy bottoms to lakes and canals
		6.2	Identify water hazards in a moving water environment	Fast current. Bends in the river. Undercuts. Strainers. Siphons. Stoppers. Weirs. Structures, eg scaffolding, bridge pillars etc. Identifying and understanding current vector
		6.3	Recall importance of avoidance and control measures	The focus on this course should be how water hazards affect both workers who have fallen in and an operational paddleboat crew tasked with the worker's rescue



	Skill sheet element		Learning outcome	Key teaching points
7	Personal equipment (PPE)	7.1	Identify differences between lifejackets and buoyancy aids and appropriate environments for their use	Explain difference between lifejacket and buoyancy aid. Buoyancy aid for planned entry to the water. Lifejacket for unplanned entry (ie worker falling in). Consequence of accidentally entering the water (water speed, obstacles, depth) may need additional impact protection of a buoyancy aid. Buoyancy aid doesn't roll an unconscious casualty. A lifejacket is designed to ensure that the wearer is floating in the correct position with their mouth and nose clear of the surface of the water. Ease of swimming in buoyancy aid, and recovery into boat compared to difficulties in a lifejacket. No danger of accidental inflation in buoyancy aid. Buoyancy aid is less susceptible to sharps. Different levels of buoyancy in lifejackets depending on work task and environment, eg 150N or 275N
		7.2	Identify national and international lifejacket and buoyancy aid standards	Applicable standards, eg ISO 12402
		7.3	Identify appropriate PPE for use when operating a work boat (non-motorised)	Explain appropriate PPE for work boat (non-motorised) crews. Use of appropriate helmets, eye protection from spray and sun, throwbag, drysuit, boots, gloves, thermal layers, spare kill cord. Considerations for wearing a helmet when wearing a buoyancy aid



	Skill sheet element		Learning outcome	Key teaching points
8	Work boat equipment	8.1	Identify appropriate work boat equipment that should be carried in the work boat (non-motorised)	Boat kit: First aid, comms, pump, welfare, spare paddles. Navigation equipment, eg maps, charts, sat nav, GPS. Repair kit and spares. Towing kit.
		8.2	Identify appropriate rescue equipment that should be carried in the work boat (non-motorised)	Technical rescue equipment: semi-static floating line, slings/tapes, karabiners, rope grabs, pulleys. Welfare pack. Throwbag. Task specific: Stretcher, ladder, additional long lines, O2, defib
9	Work boat hull types	9.1	Recall how different boat sizes and hull types affect their handling and resistance to damage	How does weight and size of boat affect its handling characteristics. Resilience to damage
10	Pre- and post-work boat checks	10.1	Perform systematic checks of boat/hull, and auxiliary equipment	Work boat checks that need to be completed before and after use. Obvious holes, wear or damage. Boat pressure.
		10.2	Prepare equipment in order to give a clean working space within the boat	All equipment secured into the boat
		10.3	Perform post-trip checks	Post use checks for damage.
11	Communications	11.1	Communicate boat-to-boat and boat-to-shore using hand and whistle signals	Boat specific hand signals: Ok, distress, point positive, medical, hold station. Whistle: attention, upstream, downstream, distress
		11.2	Apply simple commands in order to centralise command within the boat	Commands for changing trim, tying or untying the boat, exiting or entering the boat should all come from the helm
		11.3	Recall other communication options	Use of radios and pros and cons: signal, range, battery life, waterproofness
12	Work boat crew roles	12.1	Explain the primary roles of helm, bowman and rescuer within a rescue boat, and their duties	Helm: overall control, clear comms. Bowman: directions (points positive) and information for the helm. Rescuer: hands on casualty
		12.2	Apply crew roles when performing a variety of tasks	Clear communication and allocation of roles



	Skill sheet element		Learning outcome	Key teaching points
13	Navigation and IRPCS considerations for work boats	13.1	Apply International Regulations for the Prevention of Collisions at Sea (IRPCS) in order to safely operate work boat	A clear understanding of the rules of the road. Head on situation: pass port to port (steer right). Give way to the right. Power gives way to unpowered craft
		13.2	Orient map to ground and identify how water level changes will affect information represented on map/chart	Loss or gain of access with changes of water level, river or estuary/tidal
		13.3	Using an appropriate information source, identify tick features that will be seen en route	Passage plan. Return to last point if visibility or comms are lost
		13.4	Using a map/chart, confirm when at an objective	Three reasons that confirm your position. Use of sat nav
		13.5	Use stop/catch features when planning a route or work area	Large features that identify the end of a working area
14	Considerations for working at night or in poor visibility	14.1	Identify problems associated with hazard recognition, group control and application of safety standby and rescue techniques during night/poor visibility operations	Difficulties of working at night or in poor visibility. Depth perception. Comms. Line of sight. Awareness of speed over ground. Water depth. Debris. Slower travelling speeds
		14.2	Identify control measures that may be required when operating work boats in darkness or poor visibility	Personal, scene and boat lighting. Buddy system and roll call. Optional practical night exercise: simple scenarios to appreciate difficulties of working at night
15	Biosecurity and environmental considerations	15.1	Identify areas of work where cross contamination, or introduction of invasive species may be possible and suitable control measures	Check, clean, dry. Cross-contamination. Decontamination. Consideration of invasive species. Pollution. Damage to flora and fauna. Reporting



	Skill sheet element		Learning outcome	Key teaching points
16	Medical and decontamination considerations	16.1	Identify signs/symptoms and treatment for common medical issues found in a water environment	Hypothermia (too cold), hyperthermia (too hot), drowning, infection (eg leptospirosis, hepatitis), trauma eg bank hazards (slips, trips, falls), cold water shock
		16.2	Recall the importance of minimising exposure to the water and decontamination procedures post-exposure	Check, clean, dry. Hand wipes, face wipes, cover cuts etc
		16.3	Identify bank hazards and suitable control measures to prevent slips trips and falls	Wet, steep, slippery, muddy banks, overhanging branches, vegetation. Control measures: zoning, PPE and training
17	Launching and recovery	17.1	Identify considerations when launching and recovering via trailer	Discuss launching and recovery options and difficulties, including terrain, vehicle access
		17.2	Identify hand launch considerations, including manual handling	Options to move or carry boat to launch site as a whole or to move engine, boat and equipment separately. Manual handling issues. The benefits of specifically designed paddleboats, over boats without engines.
		17.3	Identify how changing conditions and deployment will affect launching/ recovery site choice	Effects of water levels. Time pressures. Remaining daylight, weather
18	Workboat handling with paddles	18.1	Identify the importance of correct trim and power distribution	Importance of timing of paddle strokes and trim for efficiency
		18.2	Be able to paddle forwards, backwards and turn	Basic boat handling with paddles in flat or slow moving water
		18.3	Recognise the importance of applying angle before momentum	Time it takes to generate momentum. Awareness of boat spin
		18.4	Apply simple command within the boat in order to achieve simple objectives	Planning for future water. One person takes charge. Specific paddle commands



	Skill sheet element		Learning outcome	Key teaching points
19	Towing	19.1	Perform both line astern and alongside tows	Towing of boats, pontoons, other work equipment
		19.2	Identify variables that influence choice between line astern and alongside tows	Different methods of towing, in line, side by side etc, advantages/disadvantages, application of methods
		19.3	Identify areas that will require management when towing	Space to manoeuvre. Distance to travel. Water conditions Damage to vessels, tensioned lines and weight distribution
20	Anchoring/securing of work boats	20.1	Identify why anchoring/securing a work boat would be required	Reasons to anchor or secure a work boat, casualty recovery. Downstream containment
		20.2	Recognise types of tethers/anchors depending on area, boat size and design	Size of anchor and type river bed composition, eg mud, gravel, rocky
		20.3	Perform deployment, including measurement of depth and checks to ensure anchor is holding	Space: allow for swing with current or tide
21	Individual and co-worker recovery into boat	21.1	Identify reasoning behind team/self-rescue ability	Who needs to be recovered? Crew member? Co-worker from bank or bridge? Injuries? Ability to self-rescue reduces task loading on other crew members
		21.2	Perform team-based rescue (or self-rescue) over sponson whilst in deep water	Recovery techniques into boat for crew members, self recovery techniques, assistance from co-crew members. Boat set up: handles, safety line, size of sponsons which help self-recovery



	Skill sheet element		Learning outcome	Key teaching points
22	Casualty management	22.1	Identify priorities for casualty care	Casualty considerations and assessment: Breathing, temperature and major trauma
		22.2	Describe how casualty care would impact on boat handling, length of transit and operation	Reduced capability of helm and crew. More load will affect paddling.
		22.3	Identify suitable placement of casualty once aboard and how medical stabilisation would influence this	Feet up or feet down considerations, temperature concerns: compression of packaging by wind
23	Boat-based conditional rescues	23.1	Identify how addition of conditional rescue tools will aid the helm's margin for error	Use of paddle or throwline to prevent the need to paddle too close to victim
		23.2	Identify environmental and casualty variables that will influence the choice of rescue	Is casualty conscious/unconscious? What in-water hazards could affect the casualty and work boat? Eg turbulent water, rocks, waves, weirs
		23.3	Perform conditional rescues from a boat, applying control measures in order to reduce risk to personnel and casualty	Practical session in flat or slow moving water. Importance of rope management in boats to avoid entrapment hazards for crew. Engine neutral or off?
24	Contact rescues	24.1	Allocate roles for casualty pick-up and recovery	Rescuer and bowman's position should not obscure the helm's view
		24.2	Use environmental factors in order to make a controlled approach	Casualty or co-worker pick up: Approach into the strongest element: wind or flow
		24.3	Recover casualties into boat using forwards- and backwards-facing techniques, and rolling	Method of recovery should be based on water speed, depth and hazards, and the nature of the casualty's injuries





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