



WATER SAFETY AND RESCUE TRAINING COURSES



VEHICLE RESCUE

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.

www.rescue3europe.com

info@rescue3europe.com

+44 (0) 1978 869069



VEHICLE RESCUE COURSES

Rescue from Vehicles in Water (RVW)	5
Rescue from Vehicles in Water plus Swiftwater and Flood Rescue Technician (RVW+SRT).....	13

Rescue from Vehicles in Water (RVW)

Course overview and target audience

A specialist course for Swiftwater and Flood Rescue Technicians (SRT) that explores the skills required to deal with rescues from vehicles in water. The course looks at vehicle behaviour and stabilisation in water, as well as access techniques and casualty extrication.

The course can be taken as a 2-day course for existing in-date Rescue 3 SRTs, or combined with an SRT recert as RVW+SRT (3 days) to enable an SRT qualification to recertify.

Contact hours 12 hours (2 days)	Prerequisites Swiftwater and Flood Rescue Technician (SRT) Minimum age: 18.
Qualification valid for 3 years	Accredited by Rescue 3 Europe

Taught by

- Swiftwater and Flood Rescue Technician Instructor (SRTI), Swiftwater and Flood Rescue Technician Advanced (Water) Instructor (SRTAWI) or Swiftwater and Flood Rescue Technician Advanced (Water and Rope) Instructor (SRTAI) who has successfully completed a Rescue From Vehicles in Water (RVW) course.

Assessment

The assessed elements of this course are:

- Foundation knowledge
- Swiftwater swimming techniques
- Throwbags
- Knots and anchor systems
- Tensioning systems and mechanical advantage
- Vehicle anchors/stabilisation



Rescue from Vehicles in Water (RVW) skill sheet contents

Theory
1. Rescue 3 philosophy
2. Water rescue training standards
3. Vehicle behaviour in water
4. Pre-planning
5. Incident size-up
6. Incident management
7. Glass management
8. Personal equipment
9. Medical and decontamination considerations
10. Considerations for night/poor visibility operations
11. Communications
Practical
12. Anchors - vehicle and bank
13. Vehicle stabilisation
14. Casualty extrication
15. Shallow water techniques
16. True rescues - tethered
17. Pendulum extrication
18. Tensioned diagonal
19. Tethered boat techniques
20. Single bank extended platform



Rescue from Vehicles in Water (RVW) 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	Swiftwater and Flood Rescue Technician (SRT) and Rescue from Vehicles in Water (RVW) 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	Vehicle behaviour in water	3.1	Recall why a vehicle may enter the water	Urgent need to reach destination. Ignoring advice or signs. Over-confidence in vehicle's ability. Unaware of the danger. Suicide attempt. Driving into floodwater
		3.2	Recall how a vehicle orients itself with relation to flow.	Typically engine upstream
		3.3	Describe the hydrology of a vehicle in water	Cushion wave, eddy line, siphon
		3.4	Recall the hazards and control measures associated with the upstream and downstream side of a vehicle in water	Siphon on upstream side of car. Danger of vehicle moving on downstream side of vehicle. Control measure: avoid wherever possible
		3.5	Recall how a vehicle behaves in deep water	High end cars have double-sealed doors, so remain buoyant for longer. Once submerged, will end up engine down, possibly inverting
		3.6	Recall the forces affecting a vehicle in water	Weight of vehicle, stream force, frictional force, buoyancy of vehicle

RVW



	Skill sheet element		Learning outcome	Key teaching points
4	Pre-planning	4.1	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
		4.2	Describe key information that should be included within a pre-plan for a vehicle in water rescue	Site-specific risk assessment, general risk assessment, access and egress to site, topography, response plan
5	Incident size-up	5.1	Demonstrate use of size-up models	CHALET and METHANE
		5.2	Perform an on-site safety brief based on risk assessments of a vehicle in water rescue	Highlight relevant hazards that will affect the rescue
		5.3	List rescue options from a vehicle in water	Wading, tensioned diagonal, non-tethered boat, tethered boat, tethered swim, helicopter
		5.4	Select an appropriate plan of action for a given incident	Decision-making models, such as TEMPOE
6	Incident management	6.1	Based on hazard recognition, apply appropriate control measures to protect personnel and bystanders at a rescue from vehicle in water	Site zoning, chain of command, team roles
		6.2	Apply different roles that may be allocated at a vehicle in water incident	Team leader, rigger, logistics, rescuer, medic. Downstream backup. Upstream spotters
		6.3	Collate relevant information in order to deliver structured messages regarding a vehicle in water incident	G-SMEAC
		6.4	Apply a simple structure and centralised command, in order to brief and manage a team	Designating roles. Apply G-SMEAC. Ensuring two-way communication
		6.5	Recall the six phases of a rescue from vehicle in water	Scene assessment. Stabilisation. Glass management. Create space. Full access. Extrication
7	Glass management	7.1	Identify hazards and apply control measures associated with vehicle glass	Avoid, where possible breaking glass. Awareness of toughened and laminated glass properties



	Skill sheet element		Learning outcome	Key teaching points
8	Personal equipment	8.1	Identify personal protective equipment (PPE) for operating and performing rescues from vehicles in water	Helmet, buoyancy aid, lifejacket, drysuit, wetsuit, footwear, insulation, knives, throwbags, gloves, waist belts, cowstails, lighting, eye protection
		8.2	Select appropriate PPE for operating and performing rescues from vehicles in water, perform pre-use checks, donning and buddy checks	CE standards, PPE inspection, buddy checks
		8.3	Recall post-use care and inspection procedures for personal equipment	PPE inspection, drying, storage and care. Highlight increased exposure to petrochemicals
9	Medical and decontamination considerations	9.1	Identify signs/symptoms and treatment for common medical issues found at a rescue from a vehicle in water	Hypothermia, hyperthermia, drowning, infection eg Leptospirosis and hepatitis, trauma, plus RTC trauma etc, cold water shock
		9.2	Recall the importance of minimising exposure to the water and decontamination procedures post-exposure	Decontamination including hand wipes, face wipes, decontamination spray
		9.3	Identify bank hazards, and suitable control measures to prevent slips, trips and falls	Rescue site assessment, appropriate footwear, site zoning, safety briefing
10	Considerations for night/poor visibility operations	10.1	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
		10.2	Identify types of lighting used within night operations	Snap lights, personal lights, scene lights, night vision goggles
11	Communications	11.1	Recognise hand signals that can be used in a water environment	Ok, help, stop, direction, medical assistance
		11.2	Recognise whistle signals that can be used in a water environment	Stop, upstream, downstream, emergency
		11.3	Identify other methods of communication in a water environment, and their limitations	Radios, mobile telephones, battery life, water resistance, signal strength



	Skill sheet element		Learning outcome	Key teaching points
12	Anchors - vehicle and bank	12.1	Identify suitable anchor points on the vehicle.	Differences between training and real world - ie suspension components used to anchor vehicle to training venue. Wheels, A, B and C posts. Sunroof. Steering column. Safety belts
		12.2	Identify suitable anchor points on the bank	Unquestionably sound anchors, eg big trees, street furniture (barriers, street lamps etc)
		12.3	Identify appropriate equipment for a rescue from vehicle in water	Use of non-floating high strength low stretch kernmantle rope. Consider the use of high strength rope for anchoring vehicle. Consider use of metal strops for creating car anchors due to sharps etc. Non-floating rope in moving water will be a discussion point
		12.4	Construct anchor systems for rescues from vehicles in water	Tie load-sharing and load-distributing anchor systems
13	Vehicle stabilisation	13.1	Identify factors affecting vehicle stabilisation during a rescue from vehicle in water	Channel bed morphology. Current flow and water depth. Rescuers accessing vehicle. Casualties exiting vehicle. Depressurisation of vehicle. Effect of anchors on vehicle
		13.2	Recall the implications on vehicle stabilisation of single and twin bank access techniques	Discussion of risk vs benefit of achieving total stabilisation vs partial stabilisation and associated operating areas
14	Casualty extrication	14.1	Identify issues of casualty management from a rescue from vehicle in water	Victim PPE, stretchers, variety of victim behaviour
		14.2	List extrication options	Wading, tensioned diagonal, non-tethered boat, tethered boat, tethered swim, helicopter
		14.3	Identify other assets that can assist in casualty extraction	Considerations for cutting and spreading hydraulic gear (use is beyond the remit of this course)



	Skill sheet element		Learning outcome	Key teaching points
15	Shallow water techniques	15.1	Identify the variables and hazards that will directly affect shallow water techniques for a rescue from a vehicle in water	Water speed, depth, channel bed morphology, personnel, equipment
		15.2	Perform single and team-based shallow water techniques for rescues from vehicles in water	Individual, line astern, line abreast, wedge, use of wading pole
		15.3	Perform tethered shallow water techniques	Single and group tethered techniques
		15.4	Perform shallow water techniques with a casualty, during a rescue from a vehicle in water	Appropriate team-based techniques, appropriate stretcher/transport method, protection of casualty from flow, downstream hazards
16	True rescues - tethered	16.1	Identify the hazards and control measures associated with a tethered swim in a moving water environment	In-water debris, bank access, rope management, casualty behaviour, use of buoyant aids, team backup
		16.2	Recall the correct procedure for an in-water emergency release using the quick release harness on a buoyancy aid	Recall, rather than demonstrate from SRT
		16.3	Demonstrate a true rescue from a vehicle using a tethered swim	In-car/on-car casualty. Demonstrate swim to casualty in moving water
		16.4	Demonstrate correct rope management when performing a tethered rescue	Rope management for rescuer - short coils in-hand. Rope management for belayer - allow for rescuer's dynamic water entry, prevent drag whilst swimming, prevent entanglement with rescuer, recovery into designated eddy
17	Pendulum extrication	17.1	Identify when a pendulum extrication would be used, its hazards and control measures	Discuss the hydrology required for this technique (moving water, clear path to eddy). Hazards: obstructions
		17.2	Perform a pendulum extrication	Pendulum extraction in moving water. Use of partially open car door to create eddy to launch the victim from
18	Tensioned diagonal	18.1	Explain why it is important for a tensioned diagonal to be tensioned and at the correct angle to the current vector	Correct tension to ensure angle is maintained. Correct angle to ensure object or person on line isn't held mid-stream
		18.2	Identify why the downstream end of a tensioned diagonal must be releasable	If person or object becomes held mid-stream, releasing allows pendulum into bank
		18.3	Demonstrate appropriate use of a tensioned diagonal for a rescue from a vehicle in water	Anchors, knots, mechanical advantage system, correct angle, releasable, sling recovery system if applicable. Vehicle must be stabilised. Tensioned diagonal is typically behind the vehicle



	Skill sheet element		Learning outcome	Key teaching points
19	Tethered boat techniques	19.1	Compare the application and limitations of single-, 2- and 4-point tethered systems	Single point tether. Single point tether with ladder. 2- and 4-point boat techniques
		19.2	Relate river flow, intended use and catastrophic failure consequences to anchor selection and belay methods for tethered boats	River volume, water speed, bank access and terrain, upstream and downstream hazards, appropriate belay techniques, site choice
		19.3	Use a tethered boat for a rescue from vehicle in water	Set up 2- or 4-point boat system. Considerations for upstream/downstream approach
20	Single bank extended platform	20.1	Identify when a single bank extended platform would be used, its hazards and control measures	Single bank access. Appropriate working room on bank
		20.2	Rig a single bank extended platform	If moving water, then bowline. Ideal is ladder lashed over both tubes
		20.3	Application of ferry angle to access the vehicle and recover the patient	Ladder lashed over both tubes if bank and surroundings allow this, ferry angle to feed boat to car. Reverse of angle to return to bank



Rescue from Vehicles in Water plus Swiftwater and Flood Rescue Technician (RVW+SRT)

Course overview and target audience

A specialist course for Swiftwater and Flood Rescue Technicians (SRT) that explores the skills required to deal with rescues from vehicles in water. The course looks at vehicle behaviour and stabilisation in water, as well as access techniques and casualty extrication.

The RVW+SRT recert course is a 3-day course that combines all learning outcomes from RVW and SRT recerts, to allow a Rescue 3 SRT to recertify, whilst also adding an additional skill set.

Contact hours 18 hours (3 days)	Prerequisites Minimum age: 18
Qualification valid for 3 years	Accredited by Rescue 3 Europe

Contact hours

18 hours (3 days)

Prerequisites

Minimum age: 18

Qualification valid for

3 years

Taught by

- Swiftwater and Flood Rescue Technician Instructor (SRTI), Swiftwater and Flood Rescue Technician Advanced (Water) Instructor (SRTAWI) or Swiftwater and Flood Rescue Technician Advanced (Water and Rope) Instructor (SRTAI) who has successfully completed a Rescue From Vehicles in Water (RVW) course.

Assessment

The assessed elements of this course are:

- Foundation knowledge
- Swiftwater swimming techniques
- Throwbags
- Knots and anchors systems
- Tensioning systems and mechanical advantage
- Vehicle anchors/stabilisation



Rescue from Vehicles in Water plus Swiftwater and Flood Rescue Technician (RVW+SRT) skill sheet contents

RVW+SRT

Theory
1. Rescue 3 philosophy
2. Training standards
3. Best practice guidelines for water rescue
4. Hydrology and water hazards
5. Vehicle behaviour in water
6. Floodwater dynamics and hazards
7. Flood theory
8. Personal equipment
9. Technical and team equipment
10. Pre-planning
11. Risk assessments
12. Incident size-up
13. Incident management and site control
14. Medical and decontamination considerations
15. Considerations for night/poor visibility operations
16. Mud, ice and unstable surface considerations
17. Introduction to searching rivers and floods
18. Helicopter familiarisation
19. Communications
20. Weir (low head dam) rescue considerations
21. Introduction to rescues from vehicles in water
22. Animal rescue considerations
23. Glass management

Practical
24. Swiftwater swimming techniques
25. Strainer swim
26. Conditional rescues - talk, reach, throw
27. Shallow water techniques
28. Tethered boat techniques
29. Inflated fire hose (if used by agency)
30. Tensioned diagonals
31. Line crossing methods
32. True rescues - tethered
33. Introduction to paddle boat handling (if used by agency)
34. Boat unwrapping (if used by agency)
35. Flips and rights (if used by agency)
36. People and equipment entrapments
37. Casualty management
38. Knots and anchor systems
39. Tensioning systems and mechanical advantage
40. Anchors - vehicle and bank
41. Vehicle stabilisation
42. Casualty extrication
43. Pendulum extrication
44. Single bank extended platform

'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.



Rescue from Vehicles in Water plus Swiftwater and Flood Rescue Technician (RVW+SRT) 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	Swiftwater and Flood Rescue Technician (SRT) 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)



	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	Vehicle behaviour in water	5.1	Recall why a vehicle may enter the water	Urgent need to reach destination. Ignoring advice or signs. Over-confidence in vehicle's ability. Unaware of the danger. Suicide attempt. Driving into floodwater
		5.2	Recall how a vehicle orients itself with relation to flow	Typically engine upstream
		5.3	Describe the hydrology of a vehicle in water	Cushion wave, eddy line, siphon
		5.4	Recall the hazards and control measures associated with the upstream and downstream side of a vehicle in water	Siphon on upstream side of car. Danger of vehicle moving on downstream side of vehicle. Control measure: avoid wherever possible
		5.5	Recall how a vehicle behaves in deep water	High end cars have double-sealed doors, so remain buoyant for longer. Once submerged, will end up engine down, possible inverting
		5.6	Recall the forces affecting a vehicle in water	Weight of vehicle, stream force, frictional force, buoyancy of vehicle
6	Floodwater dynamics and hazards	6.1	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
		6.2	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
		6.3	Explain the effect of physical, chemical and biological hazards on personnel in floodwater	Appropriate PPE, training, medical and decontamination
7	Flood theory	7.1	Identify the six phases of a flood, and the associated hazards (previously four phases)	Pre-flood. Flood warning. Initial inundation. Lateral expansion. Initial recovery. Long-term recovery
		7.2	Identify how flood warnings will correspond with phases of flooding	European Flood Awareness System (EFAS), national flood information
		7.3	State what tasks an individual trained to this level would carry out during the phases of a flooding event	SRT remit and role in flood events



	Skill sheet element		Learning outcome	Key teaching points
8	Personal equipment	8.1	Identify personal protective equipment (PPE) for operating and performing rescues in water	Helmet, buoyancy aid, lifejacket, drysuit, wetsuit, footwear, insulation, knives, throwbags, gloves, waist belts, cowstails, lighting, eye protection
		8.2	Select appropriate PPE for operating and performing rescues in water, perform pre-use checks, donning and buddy checks	CE standards, PPE inspection, buddy checks
		8.3	Recall post-use care and inspection procedures for personal equipment	PPE inspection, drying, storage and care
9	Technical and team equipment	9.1	Identify technical and team equipment for operating in and performing rescues in water	Karabiners, slings, tapes, throwbags, canyon lines, buoyant aids, swim fins, wading poles, reach pole, basket stretcher, first aid kits
		9.2	Recall post-use care and inspection procedures for technical and team equipment	Equipment inspection, drying, storage, transportation
10	Pre-planning	10.1	List the four components of a generic pre-plan	Management, personnel, training, equipment
		10.2	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
		10.3	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
11	Risk assessments	11.1	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
		11.2	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, review your assessment and update if necessary
		11.3	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, review your assessment and update if necessary



	Skill sheet element		Learning outcome	Key teaching points
12	Incident size-up	12.1	Demonstrate use of size-up models	CHALET and METHANE
		12.2	Explain the phases of a successful rescue	Locate. Access. Stabilise. Transport
		12.3	Perform an on-site safety brief based on risk assessments	Highlight relevant hazards that will affect the rescue
		12.4	List rescue options	Talk, reach, throw, go, tow, helo. Not a hierarchy of risk
		12.5	Explain the difference between true and conditional rescues	Ability of victim to participate
		12.6	Select an appropriate plan of action for a given incident	Decision-making models, such as TEMPOE
13	Incident management and site control	13.1	Based on hazard recognition, apply appropriate control measures to protect personnel and bystanders at a rescue scene	Site zoning, chain of command, team roles
		13.2	Identify issues and hazards of bystanders beyond the cold zone	Crowd control, moral pressure, bystander safety
		13.3	Apply different roles that may be allocated at a water incident	Team leader, rigger, logistics, rescuer, medic. Downstream backup. Upstream spotters
		13.4	Collate relevant information in order to deliver structured messages regarding an incident	G-SMEAC
		13.5	Apply a simple structure and centralised command, in order to brief and manage a team	Designating roles. Apply G-SMEAC. Ensuring two-way communication
14	Medical and decontamination considerations	14.1	Identify signs/symptoms and treatment for common medical issues found in a water environment	Hypothermia, hyperthermia, drowning, infection eg Leptospirosis and hepatitis, trauma
		14.2	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
		14.3	Recall the importance of minimising exposure to the water and decontamination procedures post-exposure	Decontamination including hand wipes, face wipes, decontamination spray
		14.4	Identify bank hazards, and suitable control measures to prevent slips, trips and falls	Rescue site assessment, appropriate footwear, site zoning, safety briefing



	Skill sheet element		Learning outcome	Key teaching points
15	Considerations for night/poor visibility operations	15.1	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
		15.2	Identify types of lighting used within night operations	Snap lights, personal lights, scene lights, night vision goggles
16	Mud, ice and unstable surface considerations	16.1	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
		16.2	Identify equipment and techniques used within swiftwater rescue that would have application within mud, ice and unstable surface rescues	PPE, boats, sleds and inflatable platforms, reach tools including throwbags
17	Introduction to searching rivers and floods	17.1	Identify appropriate search models	Koester's bike wheel analogy - axle, hub, spokes, rim, reflectors
		17.2	State what tasks an individual trained to this level would carry out during a river-based primary search	Reconnaissance including identifying hazards, fast moving between hotspots, identifying locations for secondary search. Reporting
		17.3	State what tasks an individual trained to this level would carry out during a river-based secondary search	Searching identified hotspots. Use of specialised assets, eg sub-surface dive team, tethered boats, bathyscopes
		17.4	State what tasks an individual trained to this level would carry out during a flood-based primary search	Reconnaissance including identifying hazards, identifying locations for secondary search, house to house shout and listen techniques, quick visual sweeps. Reporting
		17.5	State what tasks an individual trained to this level would carry out during a flood-based secondary search	Secondary search low coverage - searching hotspots highlighted in primary search. Secondary search high coverage - full search of buildings, removal of debris from buildings, no further searching will take place after this. Potential for body recovery. Body recovery considerations
18	Helicopter familiarisation	18.1	Identify hazards and control measures associated with helicopters	Noise, downwash, communication difficulties, landing area, overhead power lines, trees etc



	Skill sheet element		Learning outcome	Key teaching points
19	Communications	19.1	Recognise hand signals that can be used in a water environment	Ok, help, stop, direction, medical assistance
		19.2	Recognise whistle signals that can be used in a water environment	Stop, upstream, downstream, emergency
		19.3	Identify other methods of communication and their limitations	Radios, mobile telephones, battery life, water resistance, signal strength
20	Weir (low head dam) rescue considerations	20.1	Identify the hazards and control measures for both victim and rescuer in a hydraulic/weir	Retentive nature, in-water debris, entrapment risks
		20.2	Identify weir rescue options	Conditional reach techniques - throwbags, inflated fire hose, reach pole, tethered buoyant object. Helicopter
21	Introduction to rescues from vehicles in water	21.1	Identify reasons why vehicles end up in rivers and floodwater, and steps taken to reduce this	Urgent need to reach destination. Ignoring advice or signs. Over-confidence in vehicle's ability. Unaware of the danger. Suicide attempt. Driving into floodwater
		21.2	Describe the forces acting on a vehicle when in the water, and how these affect vehicle stability	Weight of vehicle, stream force, frictional force, buoyancy of vehicle
		21.3	Explain why and how a vehicle should be stabilised whilst in the water, and factors influencing this decision	Preventing vehicle movement, glass management, appropriate strops/slings, correct angle of stabilisation line, bombproof anchors, access to single or twin banks
		21.4	Identify methods of accessing and egressing a vehicle in water	Boat, sled, platform, tethered boat options, tensioned diagonal, shallow water techniques, swiftwater swimming techniques
		21.5	Identify factors affecting vehicle stability when extricating victims	Current flow and water depth, rescuers accessing vehicle, casualties exiting vehicle, depressurisation, effect of anchors on vehicle
22	Animal rescue considerations	22.1	Identify hazards and control measures associated with animal rescue	Panicked/stressed/injured animals, victims unwilling to leave pets, type of animal. Cages, muzzles, extricating with owner
		22.2	Identify transport considerations for animal rescue	Cages, size of animal, behaviour of animal
23	Glass management	23.1	Identify hazards and apply control measures associated with vehicle glass	Avoid, where possible, breaking glass. Awareness of toughened and laminated glass properties



	Skill sheet element		Learning outcome	Key teaching points
24	Swiftwater swimming techniques	24.1	Demonstrate the defensive swimming position	When and why, body positioning, lateral movement, breaking out of the flow
		24.2	Demonstrate the aggressive swimming position	When and why, body positioning, lateral movement, breaking out of the flow
		24.3	Transition between the defensive and aggressive swimming positions	Rolling techniques, entrapment issues, increased risk of impact on in-water features
		24.4	Adjust body angle relative to the current vector	Ferry angles, methods of adjusting body angle
		24.5	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, river-reading skills. Increasing and decreasing momentum
25	Strainer swim	25.1	Identify strainers and the hazards they pose to rescuers and casualties in the water	Entrapment, injury
		25.2	Understand that strainers should be avoided	Strainers should be avoided
		25.3	Understand the consequences of going underneath a strainer	Subsurface hazards are unknown: blockages and entrapments are highly likely
		25.4	Identify rescue options for a casualty in a strainer	Considerations based on training of rescuers. Eg team wade, tethered boat (SFR and above), team wade, tethered boat, V-lower (SRT and above)
		25.5	Using a strainer simulator, demonstrate and compare aggressive and defensive approaches to the simulator.	Defensive: can fend off with feet and work along to the end. More potential to be swept underneath the strainer, but greater protection from impacts. Protection of face on impact with the strainer. Aggressive: speed of approach and timing. More likely to get up and over the strainer, but also more open to injury



	Skill sheet element		Learning outcome	Key teaching points
26	Conditional rescues - talk, reach, throw	26.1	Identify conditional rescue options and the limitations of conditional rescues	Talk. Reach. Throw. Victim participation required
		26.2	Identify, check and prepare suitable equipment for performing a conditional rescue	Talk. Reach - pole, paddle, throwbag. Throw - buoyant object, eg life ring
		26.3	Identify appropriate sites where conditional rescues can be performed	River features, appropriate eddies, downstream backup, upstream spotter, in-water physical hazards
		26.4	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
		26.5	Perform a variety of conditional rescues	Talk rescues. Reach rescue - reach pole, throwbag
		26.6	Identify methods of managing force directed on rescuer and victim during a reach rescue as water speed increases	Rescuer/belayer moving downstream, paying out of line, appropriate site choice, appropriate eddies for recovery
27	Shallow water techniques	27.1	Identify the variables and hazards that will directly affect shallow water techniques	Water speed, depth, channel bed morphology, personnel, equipment
		27.2	Perform single and team-based shallow water techniques in a moving water environment	Individual, line astern, line abreast, wedge, use of wading pole
		27.3	Explain the application of tethered shallow water techniques in a moving water environment	Single and group tethered techniques
		27.4	Explain how the addition of a casualty would affect shallow water techniques	Appropriate team-based techniques, appropriate stretcher/transport method, protection of casualty from flow, downstream hazards
28	Tethered boat techniques	28.1	Compare the application and limitations of single-, 2- and 4-point tethered systems	Single point tether. Single point tether with ladder. 2- and 4-point boat techniques
		28.2	Relate river flow, intended use and catastrophic failure consequences to anchor selection and belay methods for tethered boats	River volume, water speed, bank access and terrain, upstream and downstream hazards, appropriate belay techniques, site choice
		28.3	Use a tethered boat for transportation and mid-stream access	Set up 2- or 4-point boat system



	Skill sheet element		Learning outcome	Key teaching points
29	Inflated fire hose (if used by agency)	29.1	Identify agency use or non-use of inflated fire hose	Agency policy. Agency standard operating guidelines. Access to appropriate inflation equipment
		29.2	Identify the hazards and control measures of working with compressed air	Safety valves, pressure indication, thermal protection, explosion protection, air inlet/outlet monitoring, transport and storage considerations
		29.3	Inflate and deflate a section of hose, if used by agency	Knowledge of inflation equipment used, safe use of compressed air system
		29.4	Perform conditional rescues with a fire hose in both basic and moving water environments, if used by agency	Reach rescue using fire hose as a team
		29.5	Identify inflated fire hose rescue options	Tensioned diagonal. Reach rescue - flat water and weir/hydraulic. Lowering from bridge - simple drop in, Long Beach and/or Charlotte method
30	Tensioned diagonals	30.1	Explain why it is important for a tensioned diagonal to be tensioned and at the correct angle to the current vector	Correct tension to ensure angle is maintained. Correct angle to ensure object or person on line isn't held mid-stream
		30.2	Identify why the downstream end of a tensioned diagonal must be releasable	If person or object becomes held mid-stream, releasing allows pendulum into bank
		30.3	Demonstrate appropriate use of a tensioned diagonal	Anchors, knots, mechanical advantage system, correct angle, releasable, sling recovery system if applicable
31	Line crossing methods	31.1	Identify the variables that would influence methods for crossing a line over a channel	Span, weather conditions, overhead obstructions, availability of bridge, water conditions, equipment, personnel, in-channel hazards
		31.2	Identify appropriate methods of crossing a line over a channel	Walk (eg bridge). Throw/launch. Shallow water techniques. Tethered boat. Tethered swim
		31.3	Demonstrate a variety of methods of crossing a line over a channel	Some/all of walk, throw/launch, shallow water techniques, tethered boat, tethered swim



	Skill sheet element		Learning outcome	Key teaching points
32	True rescues - tethered	32.1	Identify the hazards and control measures associated with a tethered swim in a moving water environment	In-water debris, bank access, rope management, casualty behaviour, use of buoyant aids, team backup
		32.2	Set-up and demonstrate an in-water emergency release using the quick release harness on a buoyancy aid	Attach a floating line to quick release harness. Demonstrate in-water release
		32.3	Identify how water speed and distance will affect timing of a tethered swim	Site choice, timing of water entry, belayer forces, water speed
		32.4	Demonstrate a true rescue using a tethered swim	In-water casualty. Demonstrate long swim to casualty in low grade water. Wade then swim. Demonstrate different water entry - flat water entry, short swim, with close recovery eddy
		32.5	Demonstrate correct rope management when performing a tethered rescue	Rope management for rescuer - short coils in-hand. Rope management for belayer - allow for rescuer's dynamic water entry, prevent drag whilst swimming, prevent entanglement with rescuer, recovery into designated eddy
33	Introduction to paddle boat handling (if used by agency)	33.1	Identify agency use or non-use of paddle boats	Agency policy and standard operating guidelines
		33.2	Identify the importance of correct trim and power distribution	Crew seating positions, paddle commands, timing
		33.3	Be able to paddle forwards, backwards and turn	Paddle techniques, and teamwork
		33.4	Recognise the importance of applying angle before forward momentum	Timing of paddle commands, don't fight crew, turn boat in direction of travel, then apply power
		33.5	Apply simple command within the boat, in order to achieve simple objectives	Teamwork and paddle commands
34	Boat unwrapping (if used by agency)	34.1	Identify methods to minimise the likelihood of a wrapped boat	Training, practice, experience, judgement. River-reading skills, weight distribution, site choice
		34.2	Identify how the movement of weight may help to unbalance a wrapped boat	Wrapped boat assessment. Forces acting on boat. Crew distribution
		34.3	Recall the application of rope systems for evacuating a wrapped boat, and unwrapping	Consideration for crew members' evacuation. Peel and pull, anchors, angles, mechanical advantage. Upstream spotters, downstream backup. Considerations for catastrophic failure of tensioned lines



	Skill sheet element		Learning outcome	Key teaching points
35	Flips and rights (if used by agency)	35.1	Identify steps to minimise the likelihood of a flip occurring	Training, practice, experience, judgement. River-reading skills, weight distribution, site choice
		35.2	Recall the sequence once a boat has flipped	Climb on upturned boat, head count, decision to flip, crew placement around boat, use of flip line, flip boat, recovery into boat
		35.3	Explain options for whether to re-flip, and variables that would affect this choice	Type of river (eg pool drop, continuous rapid), river depth, crew ability, ability to paddle upturned boat to shore, time/distance to downstream hazards
		35.4	Perform a re-flip and recovery	Demonstrate flat water flip and recovery of boat and crew
		35.5	Perform crew and casualty recovery into a boat	Individual and team recovery techniques - forwards, backwards, rolling
		35.6	Identify casualty placement on a boat	Type of boat used, number of crew, amount of equipment carried, injuries sustained by casualty, number of casualties
36	People and equipment entrapments	36.1	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
		36.2	Identify extrication methods of an entrapped casualty	Hands-on methods, wading, single bank access, twin bank access
		36.3	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
		36.4	On dry land, demonstrate use of stabilisation line from one and two banks	Single and twin bank entrapment techniques
		36.5	Compare the merits and hazards of using hands-on techniques, when approaching from upstream and downstream	Speed of access, lack of need for rope management, ability to create an eddy. Hazards - entrapment risk, number of rescuers needed in hot zone



	Skill sheet element		Learning outcome	Key teaching points
37	Casualty management	37.1	Identify hazards and control measures associated with casualty management in a moving water environment	Weather, water temperature, bank access, bank conditions, in-water features, panicking casualty
		37.2	Identify appropriate PPE for casualties	Buoyancy aid and helmet as required by transport options
		37.3	Identify priorities for managing casualties' common medical issues	Airway, breathing, circulation (ABC), spinal management, trauma injuries
		37.4	Demonstrate techniques for managing casualties' common medical issues, including airway and C-spine	Airway, breathing, circulation (ABC), C-spine rolls
38	Knots and anchor systems	38.1	Be able to identify, tie and check appropriate knots for swiftwater rescue	Overhand. Figure of 8. Alpine butterfly. No knot. Italian hitch. Clove hitch. Double fisherman's. Appropriate dressing of knot
		38.2	Recall factors affecting knot choice for swiftwater rescue applications	Ability to release under load. Ease of tying. Appropriate for task
		38.3	Identify use of anchor systems in swiftwater rescue	Tensioned diagonals. Tethered boats. Rescues from vehicles in water. Bombproof anchor. Load-sharing. Load-distributing
		38.4	Be able to select an appropriate single anchor point, and create an attachment point	Use of open and closed slings. Basket hitch. Wrap three pull two. Bombproof anchor
		38.5	Tie load-sharing and load-distributing anchor systems	Use of slings and ropes to create 2-point load-sharing and load-distributing anchors
39	Tensioning systems and mechanical advantage	39.1	Identify the need for mechanical advantage systems within swiftwater rescue	Tensioned diagonals, boat and equipment unwrapping
		39.2	Identify why external mechanical advantage systems are applied	Ability to use and move external mechanical advantage system to other areas of the rescue scene, equipment shortage
		39.3	Build and check appropriate internal and external mechanical advantage systems for use within swiftwater rescue	Simple internal 3:1 and 5:1 and compound internal 9:1 systems that can be reset and have progress capture. External system, eg 3:1 or 4:1. Correct and safe use by personnel. Line failure considerations whilst under tension



	Skill sheet element		Learning outcome	Key teaching points
40	Anchors - vehicle and bank	40.1	Identify suitable anchor points on the vehicle	Differences between training and real world - ie suspension components used to anchor vehicle to training venue. Wheels, A, B and C posts. Sunroof. Steering column. Safety belts
		40.2	Identify suitable anchor points on bank	Unquestionably sound anchors, eg big trees, street furniture (barriers, street lamps etc)
		40.3	Identify appropriate equipment for a rescue from vehicle in water	Use of non-floating high strength low stretch kernmantle rope. Consider the use of high strength rope for anchoring vehicle. Consider use of metal strops for creating car anchors due to sharps etc. Non-floating rope in moving water will be a discussion point
		40.4	Construct anchor systems for rescues from vehicles in water	Tie load-sharing and load distributing anchor systems
41	Vehicle stabilisation	41.1	Identify factors affecting vehicle stabilisation during a rescue from vehicle in water	Channel bed morphology. Current flow and water depth. Rescuers accessing vehicle. Casualties exiting vehicle. Depressurisation of vehicle. Effect of anchors on vehicle
		41.2	Recall the implications on vehicle stabilisation of single and twin bank access techniques	Discussion of risk vs benefit of achieving total stabilisation vs partial stabilisation and associated operating areas
42	Casualty extrication	42.1	Identify issues of casualty management from a rescue from vehicle in water	Victim PPE, stretchers, variety of victim behaviour
		42.2	List extrication options	Wading, tensioned diagonal, nontethered boat, tethered boat, tethered swim, helicopter
		42.3	Identify other assets that can assist in casualty extraction	Considerations for cutting and spreading hydraulic gear (use is beyond the remit of this course)
43	Pendulum extrication	43.1	Identify when a pendulum extrication would be used, its hazards and control measures	Discuss the hydrology required for this technique (moving water, clear path to eddy). Hazards: obstructions
		43.2	Perform a pendulum extrication	Pendulum extraction in moving water. Use of partially open car door to create eddy to launch the victim from



	Skill sheet element		Learning outcome	Key teaching points
44	Single bank extended platform	44.1	Identify when a single bank extended platform would be used, its hazards and control measures	Single bank access. Appropriate working room on bank
		44.2	Rig a single bank extended platform	If moving water, then bowline. Ideal is ladder lashed over both tubes
		44.3	Application of ferry angle to access the vehicle and recover the patient	Ladder lashed over both tubes if bank and surroundings allow this, ferry angle to feed boat to car. Reverse of angle to return to bank







Rescue 3 Europe Ltd
Llangollen
Denbighshire
Wales
United Kingdom

Tel: +44 (0) 1978 869 069
Email: info@rescue3europe.com
Website: www.rescue3europe.com

 [Facebook.com/Rescue3Europe](https://www.facebook.com/Rescue3Europe)

