WATER SAFETY AND RESCUE TRAINING COURSES

MANAGEMENT

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.

Rescue3 EUROPE

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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MANAGEMENT COURSES

Water and Flood Team Leader (WFTL)

Course overview and target audience

The Water and Flood Team Leader course is for existing SFR, SRT or SFRBOs who will lead a team of that level at water and flood incidents.

Contact hours	**Prerequisites**
12 hours (2 days)	Swiftwater and Flood First Responder (SFR) *or* Swiftwater and Flood Rescue Technician (SRT) *or* Swiftwater and Flood Rescue Boat Operator (SFRBO) Minimum age: 18.
Qualification valid for	**Accredited by**
3 years	Rescue 3 Europe

Taught by

- Water and Flood Team Leader Instructor (WFTLI)
- Management of Water and Flood Incidents Instructor (MWFII)

Defra level

Team Commander - Water team related incident command

Assessment

The assessed elements of this course are:

- Foundation knowledge

Water and Flood Team Leader (WFTL) skill sheet contents

Theory
1. Rescue 3 philosophy
2. Training standards
3. Foundation knowledge
4. Flood theory
5. Incident size-up
6. Incident management and site control
7. Medical and decontamination considerations
8. Considerations for night/poor visibility operations
9. Management of river and flood searches
10. Guidance and best practice documents
11. Management of rescues from vehicles in water
12. Pre-planning for water incidents
13. Welfare considerations
14. Management of powered boat operations (if used by team)
15. Weather and flood warning information
16. Local emergency flood plans
17. Team typing and deployment of national assets
18. Water and Flood Team Leader exercise

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

Water and Flood Team Leader (WFTL) 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.	Water and Flood Team Leader (WFTL) remit and role. Prerequisite to WFTL is SFR, SRT or SFRBO.
		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	Foundation knowledge	3.1	Demonstrate existing foundation knowledge from SFR/SRT and/or SFRBO, and apply to tactical decision making.	SFR, SRT and SFRBO learning outcomes.
4	Flood theory	4.1	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.
		4.2	Identify how flood warnings will correspond with phases of flooding.	European Flood Awareness System (EFAS), national flood information.
		4.3	State what tasks an individual trained to this level would carry out during the phases of a flooding event.	WFTL remit and role in flood events.

	Skill sheet element		Learning outcome	Key teaching points
5	Incident size-up	5.1	Demonstrate use of size-up models.	CHALET, METHANE, SEADEPTH.
		5.2	Explain the phases of a successful rescue.	Locate. Access. Stabilise. Transport.
		5.3	Perform an on-site safety brief based on risk assessments.	Highlight relevant hazards that will affect the rescue.
		5.4	List rescue options.	Talk, reach, throw, go, tow, helo. Not a hierarchy of risk.
		5.5	Explain the difference between true and conditional rescues.	Ability of victim to participate.
		5.6	Select an appropriate plan of action for a given incident.	Decision-making models, such as TEMPOE.
6	Incident management and site control	6.1	Based on hazard recognition, apply appropriate control measures to protect personnel and bystanders at a rescue scene.	Site zoning, chain of command, team roles.
		6.2	Identify issues and hazards of bystanders in the cold zone.	Crowd control, moral pressure, bystander safety.
		6.3	Apply different roles that may be allocated at a water incident.	Team leader, rigger, logistics, rescuer, medic. Downstream backup. Upstream spotters.
7	Medical and decontamination considerations	7.1	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.
		7.2	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.
		7.3	Recall the importance of minimising exposure to the water and decontamination procedures post-exposure.	Decontamination including hand wipes, face wipes, decontamination spray.
		7.4	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
8	Considerations for night/poor visibility operations	8.1	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.
		8.2	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
9	Management of river and flood searches	9.1	Identify appropriate search models.	Koester's bike wheel analogy - axle, hub, spokes, rim, reflectors.
		9.2	State what tasks an individual trained to this level would carry out during a river-based primary search.	SFR and SRT: Reconnaissance including identifying hazards, identifying locations for secondary search, house to house shout and listen techniques, quick visual sweeps. Reporting. SFRBO: Containment, primary search, transport for searchers.
		9.3	State what tasks an individual trained to this level would carry out during a river-based secondary search.	SFR: Searching identified hotspots from the bank. SRT: Searching identified hotpots. Use of specialised assets, eg sub-surface dive team, tethered boats, bathyscopes. SFRBO: Containment, transport for searchers, platform for secondary search, transport for casualty evacuation.
		9.4	State what tasks an individual trained to this level would carry out during a flood-based primary search.	SFR and SRT: Reconnaissance including identifying hazards, identifying locations for secondary search, house to house shout and listen techniques, quick visual sweeps. Reporting. SFRBO: Containment, primary search, transport for searchers.
		9.5	State what tasks an individual trained to this level would carry out during a flood-based secondary search.	SFR and SRT: 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. SFRBO: Containment, transport for searchers, platform for secondary search, transport for casualty evacuation.

	Skill sheet element		Learning outcome	Key teaching points
10	Guidance and best practice documents	10.1	Identify important components of local, regional and national flood rescue documentation and procedures.	National documentation, eg Defra ConOp in UK and MEM in Ireland. Regional documentation, eg All Wales Flood Plan, in Wales. Local documentation, eg MOU between brigades. Applicable legislation, eg Civil Contingencies Act.
11	Management of rescues from vehicles in water	11.1	Recall the six phases of a rescue from vehicle in water.	Scene assessment. Stabilisation. Glass management. Create space. Full access. Extrication.
		11.2	Recall the hazards and control measures associated with vehicles in water.	Siphon on upstream side of car. Danger of vehicle moving on downstream side of vehicle. Control measure: avoid wherever possible.
		11.3	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.
		11.4	Recall how a vehicle orients itself with relation to flow.	Typically engine upstream.
		11.5	Describe the hydrology of a vehicle in water.	Cushion wave, eddy line, siphon.
		11.6	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.
		11.7	Recall the forces affecting a vehicle in water.	Weight of vehicle, stream force, frictional force, buoyancy of vehicle.
		11.8	Identify issues of casualty management from a rescue from vehicle in water.	Victim PPE, stretchers, variety of victim behaviour.
		11.9	List extrication options.	Wading, tensioned diagonal, non-tethered boat, tethered boat, tethered swim, helicopter.
		11.10	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
12	Pre-planning for water incidents	12.1	List the four components of a generic pre-plan.	Management, personnel, training, equipment.
		12.2	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.
		12.3	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.
		12.4	Describe the implications of pre-deployment of assets.	Discuss the role of the coordinating agency, eg in UK the FRSNCC.
		12.5	Describe the role of regional organisations in relation to pre-planning activity.	Discuss the role of the regional organisations, eg in UK the tactical advisors.
		12.6	Describe considerations for media management, relative to the remit of someone trained to this level.	WFTL remit and role. Referring requests to Water and Flood Incident Manager and/or media team. Considerations for public/media impression of actions. When to do it/when not to do it. Briefing personnel about media engagement.
13	Welfare considerations	13.1	State the requirements for welfare considerations during extended flooding operations.	Accommodation, subsistence, breaks.
		13.2	Recall the difficulties in attaining accommodation and subsistence during extended flooding operations.	Consideration for areas that are flooded. Local resources stretched.
		13.3	Recall national considerations for reimbursement of agencies.	National policies, eg in UK Bellwin scheme.
14	Management of powered boat operations (if used by team)	14.1	Describe the major hull types applicable to flood rescue.	RIB, IRB, Cathedral hull, aluminium flat bottomed-boats.
		14.2	Describe how the six phases of flooding relate to boat choice.	Relate six phases to boat capability.
		14.3	Describe logistical and maintenance considerations for extended flooding operations.	Fuel, access to mechanics, towing, breakdowns and repair.
		14.4	Describe boat capabilities.	Match capability to rescue requirement.

	Skill sheet element		Learning outcome	Key teaching points
15	Weather and flood warning information	15.1	Demonstrate how to use online responder-based weather risk facilities.	Eg in UK, Hazard Manager to look at weather warnings.
		15.2	State how online weather data can be used to influence pre-deployment and pre-planning decision making.	Predictive tool, based on risk.
		15.3	Identify sources of regional, national and international weather and river/flood warning information.	International: EFAS. National, eg in UK, Environment Agency.
16	Local emergency flood plans	16.1	Identify sources of local flood plans.	Eg in UK, LRF (Local Resilience Forum) plans in the same footprint as the police.
		16.2	Describe the key components of a local emergency flood plan.	Eg, evacuation, risks, flood maps, assets, voluntary sector.
17	Team typing and deployment of national assets	17.1	Recall the constituent components of flooding team types.	Capability, equipment, support, transport, communication.
		17.2	Relate the Rescue 3 Europe training levels to team types.	Rescue 3 Europe course levels and national team typing.
		17.3	State the regional and national methodology of requesting national assets.	Methodology within area of operation, eg in UK FRSNCC.
18	Water and Flood Team Leader exercise	18.1	Pre-plan a hypothetical flooding incident, based upon exercise injects.	Apply pre-plan procedures.
		18.2	Respond to the hypothetical flooding incident.	Implement the flood plan, based upon injects from directing staff.
		18.3	Conduct a briefing to a hypothetical incident manager.	G-SMEAC, based on activity.
		18.4	Debrief the hypothetical incident.	Prepare a debrief.

Management of Water and Flood Incidents (MWFI)

Course overview and target audience

The MWFI course is designed to meet the need for incident commanders at water and flood incidents to have the underpinning knowledge and skills to successfully manage such operations.

Whilst it is not envisaged that such managers will need to have the same level of technical knowledge and skills as specialist water rescue teams, it is imperative that managers have a level of specific knowledge to be able to manage the event, plus sufficient personal skills and experience to safely operate in the warm zone at these incidents.

Contact hours	**Prerequisites**
30 hours (5 days)	Must be a confident swimmer. Minimum age: 18.
Qualification valid for	**Accredited by**
3 years	Rescue 3 Europe

Taught by

- Management of Water and Flood Incidents Instructor (MWFII)
  This is a Swiftwater and Flood Rescue Technician Instructor (SRTI) or Swiftwater and Flood Rescue Technician Advanced (Water and Rope) Instructor (SRTAI) with specific assessment for MWFI courses by the Rescue 3 Europe office.

Defra level

Module 5 - Water Incident Management - Water-related operational and tactical incident command relating to local incidents.

Assessment

The assessed elements of this course are:

- Foundation knowledge

Management of Water and Flood Incidents (MWFI) skill sheet contents

1. **Theory**
2. Rescue 3 philosophy
3. Training standards
4. Hydrology and water hazards
5. Floodwater dynamics and hazards
6. Flood theory
7. Personal equipment
8. Technical and team equipment
9. Incident size-up
10. Incident management and site control
11. Medical and decontamination considerations
12. Considerations for night/poor visibility operations
13. Management of river and flood searches
14. Communications
15. **Practical**
16. Guidance and best practice documents
17. Management of rescues from vehicles in water
18. Weir risk assessment
19. Pre-planning for water incidents
20. Welfare considerations
21. Management of powered boat operations
22. Weather and flood warning information
23. Local emergency flood plans
24. Multi-agency command and control considerations
25. Team typing and deployment of national assets
26. Flood management exercise

'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.

Management of Water and Flood Incidents (MWFI) 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.	Management of Water and Flood Incidents (MWFI) remit and role. The in-water practical skills of an MWFI course are comparable to an SFR (Swiftwater and Flood First Responder).
		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.

	Skill sheet element		Learning outcome	Key teaching points
3	Hydrology and water hazards	3.1	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.
		3.2	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.
		3.3	Identify water features.	Laminar flow, helical flow, current vector, eddies, upstream V, downstream V, undercuts, strainers, siphons, standing waves, hydraulics, weirs.
		3.4	Describe the impact that water features would have on individuals in water.	Force of water, river grading system, entrapments.
		3.5	Identify general water hazards, and suitable control measures.	Depth, temperature, weather.
		3.6	Identify water hazards in a basic water environment, and suitable control measures.	Lake/canal bed morphology, entrapments, canals/canal locks, debris.
		3.7	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
4	Floodwater dynamics and hazards	4.1	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.
		4.2	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.
		4.3	Explain the effect of physical, chemical and biological hazards on personnel in floodwater.	Appropriate PPE, training, medical and decontamination.
5	Flood theory	5.1	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.
		5.2	Identify how flood warnings will correspond with phases of flooding.	European Flood Awareness System (EFAS), national flood information.
		5.3	State what tasks an individual trained to this level would carry out during the phases of a flooding event.	MWFI remit and role in flood events.
6	Personal equipment	6.1	Identify personal protective equipment (PPE) for operating and performing rescues in water.	Helmet, buoyancy aid, lifejacket, drysuit, wetsuit, footwear, insulation, knives, throwbags, gloves, waistbelts, cowstails, lighting, eye protection, first aid kits, swim fins.
		6.2	Select appropriate PPE for operating and performing rescues in water, perform pre-use checks, donning and buddy checks.	CE standards, PPE inspection, buddy checks.
		6.3	Recall post-use care and inspection procedures for personal equipment.	PPE inspection, drying, storage and care.

	Skill sheet element		Learning outcome	Key teaching points
7	Technical and team equipment	7.1	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.
		7.2	Recall post-use care and inspection procedures for technical and team equipment.	Equipment inspection, drying, storage, transportation.
8	Incident size-up	8.1	Demonstrate use of size-up models.	CHALET, METHANE, SEADEPTH.
		8.2	Explain the phases of a successful rescue.	Locate. Access. Stabilise. Transport.
		8.3	Perform an on-site safety brief based on risk assessments.	Highlight relevant hazards that will affect the rescue.
		8.4	List rescue options.	Talk, reach, throw, go, tow, helo. Not a hierarchy of risk.
		8.5	Explain the difference between true and conditional rescues.	Ability of victim to participate.
		8.6	Select an appropriate plan of action for a given incident.	Decision-making models, such as TEMPOE.
9	Incident management and site control	9.1	Based on hazard recognition, apply appropriate control measures to protect personnel and bystanders at a rescue scene.	Site zoning, chain of command, team roles.
		9.2	Identify issues and hazards of bystanders in the cold zone.	Crowd control, moral pressure, bystander safety.
		9.3	Apply different roles that may be allocated at a water incident.	Team leader, rigger, logistics, rescuer, medic. Downstream backup. Upstream spotters.

	Skill sheet element		Learning outcome	Key teaching points
10	Medical and decontamination 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	Management of river and flood searches	12.1	Identify appropriate search models.	Koester's bike wheel analogy - axle, hub, spokes, rim, reflectors.
		12.2	State what tasks an individual trained to this level would carry out during a river-based primary search.	Reconnaissance including identifying hazards, identifying locations for secondary search, house to house shout and listen techniques, quick visual sweeps. Reporting.
		12.3	State what tasks an individual trained to this level would carry out during a river-based secondary search.	Searching identified hotspots from the bank.
		12.4	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.
		12.5	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.
13	Communications	13.1	Recognise hand signals that can be used in a water environment.	Ok, help, stop, direction, medical assistance.
		13.2	Recognise whistle signals that can be used in a water environment.	Stop, upstream, downstream, emergency.
		13.3	Identify other methods of communication in a water environment, and their limitations.	Radios, mobile telephones, battery life, water resistance, signal strength.
14	Guidance and best practice documents	14.1	Identify important components of local, regional and national flood rescue documentation and procedures	National documentation, eg Defra ConOp in UK and MEM in Ireland. Regional documentation, eg All Wales Flood Plan, in Wales. Local documentation, eg MOU between brigades. Applicable legislation, eg Civil Contingencies Act.

	Skill sheet element		Learning outcome	Key teaching points
15	Management of rescues from vehicles in water	15.1	Recall the six phases of a rescue from vehicle in water.	Scene assessment. Stabilisation. Glass management. Create space. Full access. Extrication.
		15.2	Recall the hazards and control measures associated with vehicles in water.	Siphon on upstream side of car. Danger of vehicle moving on downstream side of vehicle. Control measure: avoid wherever possible.
		15.3	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.
		15.4	Recall how a vehicle orients itself with relation to flow.	Typically engine upstream.
		15.5	Describe the hydrology of a vehicle in water.	Cushion wave, eddy line, siphon.
		15.6	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.
		15.7	Recall the forces affecting a vehicle in water.	Weight of vehicle, stream force, frictional force, buoyancy of vehicle.
		15.8	Identify issues of casualty management from a rescue from vehicle in water.	Victim PPE, stretchers, variety of victim behaviour.
		15.9	List extrication options.	Wading, tensioned diagonal, non-tethered boat, tethered boat, tethered swim, helicopter.
		15.10	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
16	Weir risk assessment	16.1	Identify the key features that can make a hydraulic/weir dangerous, and their impact on both victim and rescuer.	Towback, depth of hydraulic, height of drop, face height and angle, floating debris, uniformity, sides of hydraulic, orientation of hydraulic to flow, downstream hazards, composition of river bed.
		16.2	Perform a Rescue 3 weir risk assessment.	Complete Rescue 3 weir risk assessment.
		16.3	Relate the Rescue 3 weir risk assessment to rescue options.	Conditional and true rescue techniques based on weir risk assessment.
17	Pre-planning for water incidents	17.1	List the four components of a generic pre-plan.	Management, personnel, training, equipment.
		17.2	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.
		17.3	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.
		17.4	Describe the implications of pre-deployment of assets.	Discuss the role of the coordinating agency, eg in UK National Resilience Fire Control.
		17.5	Describe the role of regional organisations in relation to pre-planning activity.	Discuss the role of the regional organisations, eg in UK the tactical advisors.
		17.6	Describe considerations for media management, relative to the remit of someone trained to this level.	MWFI remit and role. Referring requests to media team. Considerations for public/media impression of actions. When to do it/when not to do it. Briefing personnel about media engagement.

	Skill sheet element		Learning outcome	Key teaching points
18	Welfare considerations	18.1	State the requirements for welfare considerations during extended flooding operations.	Accommodation, subsistence, breaks.
		18.2	Recall the difficulties in attaining accommodation and subsistence during extended flooding operations.	Consideration for areas that are flooded. Local resources stretched.
		18.3	Recall national considerations for reimbursement of agencies.	National policies, eg in UK Bellwin scheme.
19	Management of powered boat operations	19.1	Describe the major hull types applicable to flood rescue.	RIB, IRB, Cathedral hull, aluminium flat bottomed-boats.
		19.2	Describe how the six phases of flooding relate to boat choice.	Relate six phases to boat capability.
		19.3	Describe logistical and maintenance considerations for extended flooding operations.	Fuel, access to mechanics, towing, breakdowns and repair.
		19.4	Describe boat capabilities.	Match capability to rescue requirement.
20	Weather and flood warning information	20.1	Demonstrate how to use online responder-based weather risk facilities.	Eg in UK, Hazard Manager to look at weather warnings.
		20.2	State how online weather data can be used to influence pre-deployment and pre-planning decision making.	Predictive tool, based on risk.
		20.3	Identify sources of regional, national and international weather and river/flood warning information.	International: EFAS. National, eg in UK, Environment Agency.
21	Local emergency flood plans	21.1	Identify sources of local flood plans.	Eg in UK, LRF (Local Resilience Forum) plans in the same footprint as the police.
		21.2	Describe the key components of a local emergency flood plan.	Eg, evacuation, risks, flood maps, assets, voluntary sector.
22	Multi-agency command and control considerations	22.1	Describe how a multi-agency command structure can evolve.	Bottom-up growth as scope of incident grows.
		22.2	Describe the information pathway through a multi-agency command structure.	Call handling and management.
		22.3	Identify the hazards and control measures associated with spate call handling.	Volume of calls, pre-planning, recall to duty, shift changes.

	Skill sheet element		Learning outcome	Key teaching points
23	Team typing and deployment of national assets	23.1	Recall the constituent components of flooding team types.	Capability, equipment, support, transport, communication.
		23.2	Relate the Rescue 3 Europe training levels to team types.	Rescue 3 Europe course levels and national team typing.
		23.3	State the regional and national methodology of requesting national assets.	Methodology within area of operation, in UK National Resilience Fire Control.
24	Flood management exercise	24.1	Prepare a hypothetical flood plan.	Consider vulnerable people, flood maps, evacuation routes, forward holding areas, high risk areas.
		24.2	Use the flood plan to pre-plan a hypothetical flooding event, based upon exercise injects.	Apply pre-plan procedures.
		24.3	Respond to the hypothetical flooding event.	Implement the flood plan, based upon injects from directing staff.
		24.4	Conduct a briefing to a hypothetical incident commander during handover.	G-SMEAC, based on activity.
		24.5	Debrief the hypothetical incident.	Prepare a debrief, based upon meeting command objectives.

Management of Water and Flood Incidents plus Swiftwater and Flood First Responder (MWFI+SFR)

Course overview and target audience

The MWFI course is designed to meet the need for incident commanders at water and flood incidents to have the underpinning knowledge and skills to successfully manage such operations.

Whilst it is not envisaged that such managers will need to have the same level of technical knowledge and skills as specialist water rescue teams, it is imperative that managers have a level of specific knowledge to be able to manage the event, plus sufficient personal skills and experience to safely operate in the warm zone at these incidents.

Contact hours	**Prerequisites**
30 hours (5 days)	Must be a confident swimmer. Minimum age: 18.
Qualification valid for	**Accredited by**
3 years	Rescue 3 Europe

Taught by

- Management of Water and Flood Incidents Instructor (MWFII)
  This is a Swiftwater and Flood Rescue Technician Instructor (SRTI) or Swiftwater and Flood Rescue Technician Advanced (Water and Rope) Instructor (SRTAI) with specific assessment for MWFI courses by the Rescue 3 Europe office.

Defra level

Module 5 - Water Incident Management - Water-related operational and tactical incident command relating to local incidents.

Assessment

The assessed elements of this course are:

- Foundation knowledge

Management of Water and Flood Incidents (MWFI) skill sheet contents

Theory
1. Rescue 3 philosophy
2. Training standards
3. Hydrology and water hazards
4. Floodwater dynamics and hazards
5. Flood theory
6. Personal equipment
7. Technical and team equipment
8. Incident size-up
9. Incident management and site control
10. Medical and decontamination considerations
11. Considerations for night/poor visibility operations
12. Management of river and flood searches
13. Communications
14. **Practical**
15. Swiftwater swimming techniques
16. Strainer swim
17. Conditional rescues – talk, reach, throw
18. Shallow water techniques
19. Casualty management
20. People and equipment entrapments
21. Guidance and best practice documents
22. Management of rescues from vehicles in water
23. Weir risk assessment
24. Pre-planning for water incidents
25. Welfare considerations
26. Management of powered boat operations
27. Weather and flood warning information
28. Local emergency flood plans
29. Multi-agency command and control considerations
30. Team typing and deployment of national assets
31. Flood management exercise
32. Inflated fire hose (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.

Management of Water and Flood Incidents (MWFI) 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.	Management of Water and Flood Incidents (MWFI) remit and role. The in-water practical skills of an MWFI course are comparable to an SFR (Swiftwater and Flood First Responder).
		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.

	Skill sheet element		Learning outcome	Key teaching points
3	Hydrology and water hazards	3.1	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.
		3.2	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.
		3.3	Identify water features.	Laminar flow, helical flow, current vector, eddies, upstream V, downstream V, undercuts, strainers, siphons, standing waves, hydraulics, weirs.
		3.4	Describe the impact that water features would have on individuals in water.	Force of water, river grading system, entrapments.
		3.5	Identify general water hazards, and suitable control measures.	Depth, temperature, weather.
		3.6	Identify water hazards in a basic water environment, and suitable control measures.	Lake/canal bed morphology, entrapments, canals/canal locks, debris.
		3.7	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
4	Floodwater dynamics and hazards	4.1	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.
		4.2	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.
		4.3	Explain the effect of physical, chemical and biological hazards on personnel in floodwater.	Appropriate PPE, training, medical and decontamination.
5	Flood theory	5.1	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.
		5.2	Identify how flood warnings will correspond with phases of flooding.	European Flood Awareness System (EFAS), national flood information.
		5.3	State what tasks an individual trained to this level would carry out during the phases of a flooding event.	MWFI remit and role in flood events.
6	Personal equipment	6.1	Identify personal protective equipment (PPE) for operating and performing rescues in water.	Helmet, buoyancy aid, lifejacket, drysuit, wetsuit, footwear, insulation, knives, throwbags, gloves, waistbelts, cowstails, lighting, eye protection, first aid kits, swim fins.
		6.2	Select appropriate PPE for operating and performing rescues in water, perform pre-use checks, donning and buddy checks.	CE standards, PPE inspection, buddy checks.
		6.3	Recall post-use care and inspection procedures for personal equipment.	PPE inspection, drying, storage and care.

	Skill sheet element		Learning outcome	Key teaching points
7	Technical and team equipment	7.1	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.
		7.2	Recall post-use care and inspection procedures for technical and team equipment.	Equipment inspection, drying, storage, transportation.
8	Incident size-up	8.1	Demonstrate use of size-up models.	CHALET, METHANE, SEADEPTH.
		8.2	Explain the phases of a successful rescue.	Locate. Access. Stabilise. Transport.
		8.3	Perform an on-site safety brief based on risk assessments.	Highlight relevant hazards that will affect the rescue.
		8.4	List rescue options.	Talk, reach, throw, go, tow, helo. Not a hierarchy of risk.
		8.5	Explain the difference between true and conditional rescues.	Ability of victim to participate.
		8.6	Select an appropriate plan of action for a given incident.	Decision-making models, such as TEMPOE.
9	Incident management and site control	9.1	Based on hazard recognition, apply appropriate control measures to protect personnel and bystanders at a rescue scene.	Site zoning, chain of command, team roles.
		9.2	Identify issues and hazards of bystanders in the cold zone.	Crowd control, moral pressure, bystander safety.
		9.3	Apply different roles that may be allocated at a water incident.	Team leader, rigger, logistics, rescuer, medic. Downstream backup. Upstream spotters.

	Skill sheet element		Learning outcome	Key teaching points
10	Medical and decontamination 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	Management of river and flood searches	12.1	Identify appropriate search models.	Koester's bike wheel analogy - axle, hub, spokes, rim, reflectors.
		12.2	State what tasks an individual trained to this level would carry out during a river-based primary search.	Reconnaissance including identifying hazards, identifying locations for secondary search, house to house shout and listen techniques, quick visual sweeps. Reporting.
		12.3	State what tasks an individual trained to this level would carry out during a river-based secondary search.	Searching identified hotspots from the bank.
		12.4	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.
		12.5	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.
13	Communications	13.1	Recognise hand signals that can be used in a water environment.	Ok, help, stop, direction, medical assistance.
		13.2	Recognise whistle signals that can be used in a water environment.	Stop, upstream, downstream, emergency.
		13.3	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
14	Swiftwater swimming techniques	14.1	Demonstrate the defensive swimming position.	When and why, body positioning, lateral movement, breaking out of the flow.
		14.2	Demonstrate the aggressive swimming position.	When and why, body positioning, lateral movement, breaking out of the flow.
		14.3	Transition between the defensive and aggressive swimming positions.	Rolling techniques, entrapment issues, increased risk of impact on in-water features.
		14.4	Adjust body angle relative to the current vector.	Ferry angles, methods of adjusting body angle.
		14.5	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.
15	Strainer swim	15.1	Identify strainers and the hazards they pose to rescuers and casualties in the water.	Entrapment, injury.
		15.2	Understand that strainers should be avoided.	Strainers should be avoided.
		15.3	Understand the consequences of going underneath a strainer.	Subsurface hazards are unknown: blockages and entrapments are highly likely.
		15.4	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).
		15.5	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
16	Conditional rescues - talk, reach, throw	16.1	Identify conditional rescue options and the limitations of conditional rescues.	Talk. Reach. Throw. Victim participation required.
		16.2	Identify, check and prepare suitable equipment for performing a conditional rescue.	Talk. Reach - pole, paddle, throwbag. Throw - buoyant object, eg life ring.
		16.3	Identify appropriate sites where conditional rescues can be performed.	River features, appropriate eddies, downstream backup, upstream spotter, in-water physical hazards.
		16.4	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.
		16.5	Perform a variety of conditional rescues.	Talk rescues. Reach rescue - reach pole, throwbag.
		16.6	Identify methods of managing force directed on rescuer and victim as water speed increases.	Rescuer/belayer moving downstream, paying out of line, appropriate site choice, appropriate eddies for recovery.
17	Shallow water techniques	17.1	Identify the variables and hazards that will directly affect shallow water techniques.	Water speed, depth, channel bed morphology, personnel, equipment.
		17.2	Perform single and team-based shallow water techniques.	Individual, line astern, line abreast, wedge, use of wading pole.
		17.3	Explain the application of tethered shallow water techniques.	Single and group tethered techniques.
		17.4	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.

	Skill sheet element		Learning outcome	Key teaching points
18	Casualty management	18.1	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.
		18.2	Identify appropriate PPE for casualties.	Buoyancy aid and helmet as required by transport options.
		18.3	Identify priorities for managing casualties' common medical issues.	Airway, breathing, circulation (ABC), spinal management, trauma injuries.
19	People and equipment entrapments	19.1	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.
		19.2	Identify extrication methods of an entrapped casualty.	Hands-on methods, wading, single bank access, twin bank access.
		19.3	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.
		19.4	On dry land, demonstrate use of stabilisation line and extrication methods from one and two banks.	Single and twin bank entrapment techniques.
20	Guidance and best practice documents	20.1	Identify important components of local, regional and national flood rescue documentation and procedures.	National documentation, eg Defra ConOp in UK and MEM in Ireland. Regional documentation, eg All Wales Flood Plan, in Wales. Local documentation, eg MOU between brigades. Applicable legislation, eg Civil Contingencies Act.

	Skill sheet element		Learning outcome	Key teaching points
21	Management of rescues from vehicles in water	21.1	Recall the six phases of a rescue from vehicle in water.	Scene assessment. Stabilisation. Glass management. Create space. Full access. Extrication.
		21.2	Recall the hazards and control measures associated with vehicles in water.	Siphon on upstream side of car. Danger of vehicle moving on downstream side of vehicle. Control measure: avoid wherever possible.
		21.3	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.
		21.4	Recall how a vehicle orients itself with relation to flow.	Typically engine upstream.
		21.5	Describe the hydrology of a vehicle in water.	Cushion wave, eddy line, siphon.
		21.6	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.
		21.7	Recall the forces affecting a vehicle in water.	Weight of vehicle, stream force, frictional force, buoyancy of vehicle.
		21.8	Identify issues of casualty management from a rescue from vehicle in water.	Victim PPE, stretchers, variety of victim behaviour.
		21.9	List extrication options.	Wading, tensioned diagonal, non-tethered boat, tethered boat, tethered swim, helicopter.
		21.10	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
22	Weir risk assessment	22.1	Identify the key features that can make a hydraulic/weir dangerous, and their impact on both victim and rescuer.	Towback, depth of hydraulic, height of drop, face height and angle, floating debris, uniformity, sides of hydraulic, orientation of hydraulic to flow, downstream hazards, composition of river bed.
		22.2	Perform a Rescue 3 weir risk assessment.	Complete Rescue 3 weir risk assessment.
		22.3	Relate the Rescue 3 weir risk assessment to rescue options.	Conditional and true rescue techniques based on weir risk assessment.
23	Pre-planning for water incidents	23.1	List the four components of a generic pre-plan.	Management, personnel, training, equipment.
		23.2	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.
		23.3	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.
		23.4	Describe the implications of pre-deployment of assets.	Discuss the role of the coordinating agency, eg in UK National Resilience Fire Control.
		23.5	Describe the role of regional organisations in relation to pre-planning activity.	Discuss the role of the regional organisations, eg in UK the tactical advisors.
		23.6	Describe considerations for media management, relative to the remit of someone trained to this level.	MWFI remit and role. Referring requests to media team. Considerations for public/media impression of actions. When to do it/when not to do it. Briefing personnel about media engagement.

	Skill sheet element		Learning outcome	Key teaching points
24	Welfare considerations	24.1	State the requirements for welfare considerations during extended flooding operations.	Accommodation, subsistence, breaks.
		24.2	Recall the difficulties in attaining accommodation and subsistence during extended flooding operations.	Consideration for areas that are flooded. Local resources stretched.
		24.3	Recall national considerations for reimbursement of agencies.	National policies, eg in UK Bellwin scheme.
25	Management of powered boat operations	25.1	Describe the major hull types applicable to flood rescue.	RIB, IRB, Cathedral hull, aluminium flat bottomed-boats.
		25.2	Describe how the six phases of flooding relate to boat choice.	Relate six phases to boat capability.
		25.3	Describe logistical and maintenance considerations for extended flooding operations.	Fuel, access to mechanics, towing, breakdowns and repair.
		25.4	Describe boat capabilities.	Match capability to rescue requirement.
26	Weather and flood warning information	26.1	Demonstrate how to use online responder-based weather risk facilities.	Eg in UK, Hazard Manager to look at weather warnings.
		26.2	State how online weather data can be used to influence pre-deployment and pre-planning decision making.	Predictive tool, based on risk.
		26.3	Identify sources of regional, national and international weather and river/flood warning information.	International: EFAS. National, eg in UK, Environment Agency.
27	Local emergency flood plans	27.1	Identify sources of local flood plans.	Eg in UK, LRF (Local Resilience Forum) plans in the same footprint as the police.
		27.2	Describe the key components of a local emergency flood plan.	Eg, evacuation, risks, flood maps, assets, voluntary sector.
28	Multi-agency command and control considerations	28.1	Describe how a multi-agency command structure can evolve.	Bottom-up growth as scope of incident grows.
		28.2	Describe the information pathway through a multi-agency command structure.	Call handling and management.
		28.3	Identify the hazards and control measures associated with spate call handling.	Volume of calls, pre-planning, recall to duty, shift changes.

	Skill sheet element		Learning outcome	Key teaching points
29	Team typing and deployment of national assets	29.1	Recall the constituent components of flooding team types.	Capability, equipment, support, transport, communication.
		29.2	Relate the Rescue 3 Europe training levels to team types.	Rescue 3 Europe course levels and national team typing.
		29.3	State the regional and national methodology of requesting national assets.	Methodology within area of operation, in UK National Resilience Fire Control.
30	Flood management exercise	30.1	Prepare a hypothetical flood plan.	Consider vulnerable people, flood maps, evacuation routes, forward holding areas, high risk areas.
		30.2	Use the flood plan to pre-plan a hypothetical flooding event, based upon exercise injects.	Apply pre-plan procedures.
		30.3	Respond to the hypothetical flooding event.	Implement the flood plan, based upon injects from directing staff.
		30.4	Conduct a briefing to a hypothetical incident commander during handover.	G-SMEAC, based on activity.
		30.5	Debrief the hypothetical incident.	Prepare a debrief, based upon meeting command objectives.
31	Inflated fire hose (if used by agency)	31.1	Identify agency use or non-use of inflated fire hose.	Agency policy. Agency standard operating guidelines. Access to appropriate inflation equipment.
		31.2	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.
		31.3	Inflate and deflate a section of hose, if used by agency.	Knowledge of inflation equipment used, safe use of compressed air system.
		31.4	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.
		31.5	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.

Foundation knowledge Flood Management for Non-Emergency Services (FMNES)

Course overview and target audience

The FMNES course is designed for managers of non-emergency services during flood events. For example, within the UK these are Category 2 responders as defined in the Civil Contingencies Act (eg utilities and transport companies).

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

Taught by

- Management of Water and Flood Incidents Instructor (MWFII)
  This is a Swiftwater and Flood Rescue Technician Instructor (SRTI) or Swiftwater and Flood Rescue Technician Advanced (Water and Rope) Instructor (SRTAI) with specific assessment for MWFI courses by the Rescue 3 Europe office.

Assessment

The assessed elements of this course are:

- Foundation knowledge

Flood Management for Non-Emergency Services (FMNES) skill sheet contents

Theory
1. Rescue 3 philosophy
2. Water rescue training standards
3. Hydrology
4. Floodwater dynamics and hazards
5. Flood theory
6. Personal equipment
7. Technical and team equipment
8. Training levels and operational remits
9. Guidance and best practice documents
10. Swiftwater swimming techniques (optional)
11. Strainer swim (optional)
12. Conditional rescues - talk, reach, throw (optional)
13. Shallow water techniques (optional)
14. Overview of water rescue techniques (optional)
15. In-water night/poor visibility operations (optional)
16. Pre-planning
17. Organisational procedures and SOPs
18. Dynamic risk assessment and incident size-up
19. Incident management and site control
20. Welfare considerations
21. Medical and decontamination considerations
22. Communications
23. Weather information and flood warnings
24. SEADEPTH model
25. Community and multi-agency flood plans
26. Multi-agency command and control considerations
27. National flood assets

Management of Search Operations (MSO)

Course overview and target audience

This course is aimed at search and rescue instructors and managers who either require a greater understanding of the searching process, or who will be involved with managing searches in water or during flooding incidents. It is pitched at operational and tactical levels, with a balance of theory work in the classroom and practical sessions outside.

Contact hours	**Prerequisites**
18 hours (3 days)	Swiftwater and Flood First Responder (SFR) or Management of Water and Flood Incidents (MWFI) Minimum age: 18.
Qualification valid for	**Accredited by**
3 years	Rescue 3 Europe

Taught by

- Searching River and Floods Instructor (SRFI)
  This is a 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) with specific assessment for SRF courses by the Rescue 3 Europe office.

Assessment

The assessed elements of this course are:

- Foundation knowledge

Management of Search Operations (MSO) skill sheet contents

Theory
1. Rescue 3 philosophy
2. Training standards
3. Personal equipment
4. Pre-planning
5. Considerations for night/poor visibility operations
6. Search operation communications
7. Lost person behaviour
8. Mapping
9. Command structure
10. Primary search phase
11. Search team briefing and debriefing
12. Formal search phase
13. Consensus POA
14. Coverage and POD
15. Search effort documentation
16. Considerations for searching water
17. Urban flooding considerations

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