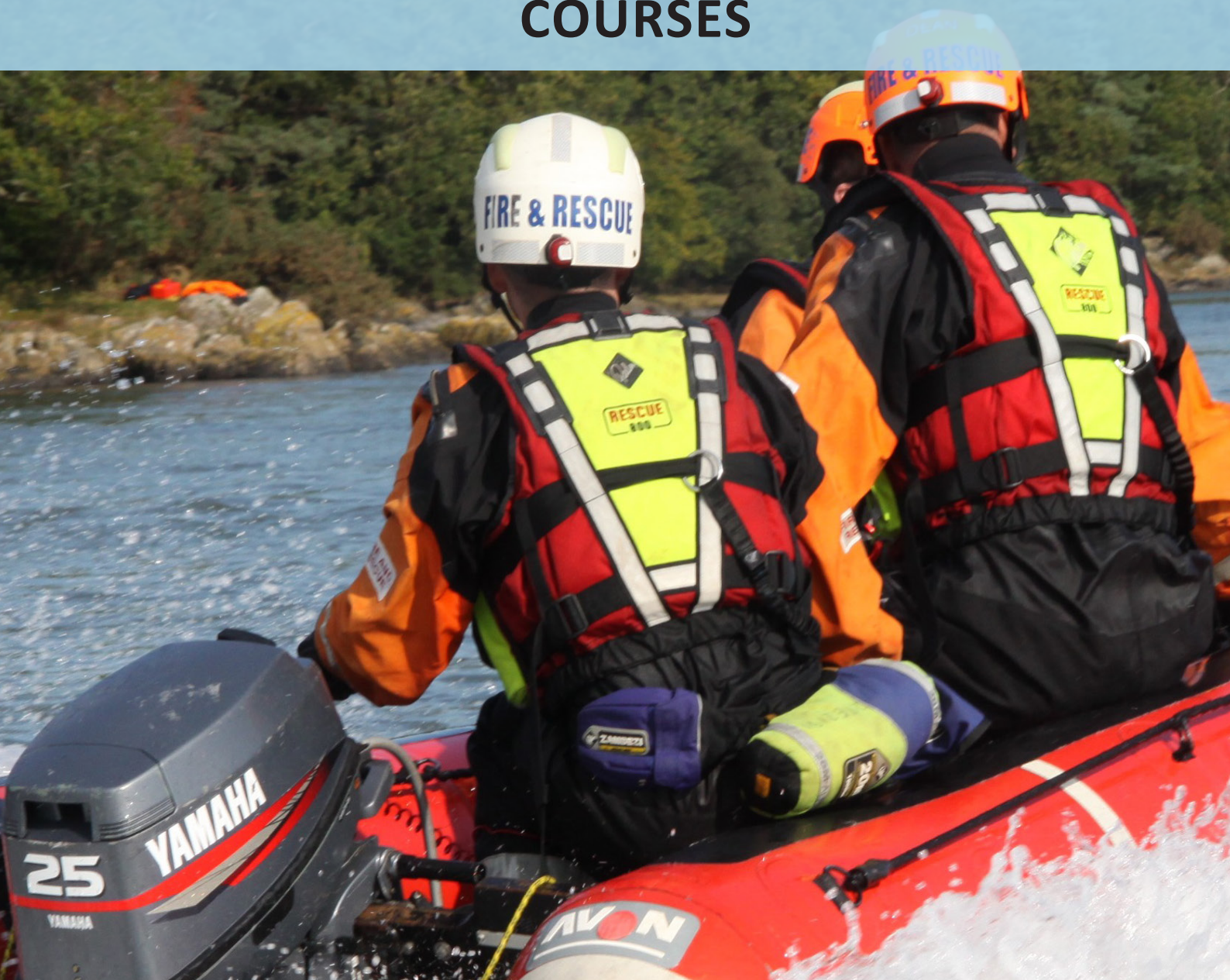




BOAT SAFETY AND RESCUE TRAINING COURSES



POWERBOAT

About Rescue 3 Europe

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

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

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

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

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





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

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POWERBOAT COURSES

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Rescue Boat Operator (RBO)

Course overview and target audience

The Rescue Boat Operator course is suitable for people with little or no powerboat experience who wish to attain an inland boat handling and rescue boat capability on flat or slow moving water.

Contact hours 12 hours (2 days) or 6 hours (1 day) add-on to International Certificate of Competence or equivalent national course, eg RYA powerboating level 2	Prerequisites Must be a confident swimmer Minimum age; 18
Qualification valid for 3 years	Accredited by Rescue 3 Europe

Taught by

- Rescue Boat Operator Instructor (RBOI)
- Flood Rescue Boat Operator Instructor (FRBOI)
- Swiftwater and Flood Rescue Boat Operator Instructor (SFRBOI)

Assessment

The assessed elements of this course are:

- Foundation knowledge
- Boat handling under power
- Boat handling with paddles
- Team/personal recovery
- Casualty pick-up and recovery



Rescue Boat Operator (RBO) skill sheet contents

Theory	
1. Rescue 3 philosophy	
2. Water rescue training standards	
3. Personal equipment	
4. Dynamic risk assessment and incident size-up	
5. Pre-planning	
6. Medical and decontamination considerations	
7. Navigation and route planning	
8. Communications	
9. Crew operational roles	
10. Boat, hull and drive types	
11. Rescue boat equipment	
12. Pre- and post-trip checks	
Practical	
13. Launching and recovery	
14. Boat handling under power	
15. Boat handling with paddles	
16. Towing	
17. Anchoring/securing	
18. Considerations for night/poor visibility operations	
19. Search considerations	
20. Team/personal recovery	
21. Casualty pick-up and recovery	
22. Casualty management	
23. Boat-based conditional rescues	
24. Boat-based stretcher management	



Rescue Boat Operator (RBO) learning outcomes and key teaching points

	Skill sheet element		Learning outcome	Key teaching points
1	Rescue 3 philosophy	1.1	Explain the order of priorities at a water rescue scene.	Self > team > victim.
		1.2	Recall the steps required in order to develop judgement.	Training. Practice. Experience. Judgement.
		1.3	Apply best practice guidelines to powerboat operations, in order to produce safe working practice.	Always have a backup plan: downstream exit for engine failure.
2	Water rescue training standards	2.1	Recognise the different levels of training with the Rescue 3 scheme, and identify the role of a boat at a rescue scene.	RBO, FRBO, SFRBO. Greater capability for access and transportation.
		2.2	State how the Rescue 3 scheme fits within national and international standards.	Rescue 3 standards, eg NFPA, DEFRA.
		2.3	Identify where powerboats fit into rescue options.	Deep water, expansive flooding, swiftwater, multiple transfers of welfare and people.
3	Personal equipment	3.1	Identify PPE and equipment used for in-water operations by rescue boat operators.	PPE: Buoyancy aid, helmet, eye protection, throwbag, drysuit, boots, gloves, thermal layers. Boat kit: Engine, prop guard. 2 separate fuel bladders. Keys, kill cord and spares. Paddles. Navigation equipment, eg maps, charts, sat nav, GPS. Fire extinguisher. First aid kit. Comms. Lighting for boat. Bowline. Pump. Tools, repair kit and spares. Towing kit. Anchor. Inshore flare pack. Technical rescue equipment: semi-static floating line, slings/tapes, karabiners, rope grabs, pulleys. Welfare pack. Short throwbag. Task specific: Stretcher, ladder, additional long lines, O2, defib.
		3.2	Select appropriate PPE for a rescue boat operator, dress and perform buddy checks.	PPE list, buddy checks.
4	Dynamic risk assessment and incident size-up	4.1	Ensure appropriate redundancy for passage plan and potential environmental changes.	Back up plan for engine failure, multiple boats, direction of flow, changes in weather/water level.
		4.2	Perform a risk assessment of the following areas: rescue site, downstream and upstream.	Depth of water, debris, hazards.
		4.3	Based on risk assessment of environment and casualty requirements, select an appropriate plan.	Risk to boat/risk to rescuers.



	Skill sheet element		Learning outcome	Key teaching points
5	Pre-planning	5.1	Identify sources of information useful for pre-planning powerboat operations.	River guides (online and books), tide tables (online and booklet), online river gauges.
		5.2	Describe key information that should be included within a pre-plan specific to powerboat.	Slipway access/egress, alternative access/egress if no slipway. Access to water level information. Task specific kit list. Emergency RV.
6	Medical and decontamination considerations	6.1	Identify priorities when dealing with casualties from both mid-water and a dry location.	Temperature and major trauma.
		6.2	Apply techniques which minimise exposure to the water and decontamination procedures.	Remain in the boat to minimise exposure to HAZMAT. Gels, wipes and sprays post-exposure.
7	Navigation and route planning	7.1	Apply International Regulations for the Prevention of Collisions at Sea (IRPCS) in order to safely operate powerboats under a variety of light conditions.	Head on situation: pass port to port (steer right). Give way to the right. Power gives way to unpowered craft.
		7.2	Orient map to ground and identify how water level changes will affect information represented on map/chart.	Loss or gain of access with changes of water level.
		7.3	Using an appropriate information source, identify tick features that will be seen en route.	Passage plan. Return to last point if visibility or comms are lost.
		7.4	Using a map/chart, confirm when at an objective.	Three reasons that confirm your position.
		7.5	Be able to use a sat nav unit in a flooded urban environment.	Use of sat nav.
		7.6	Use stop/catch features when planning a route.	Large features that identify the end of a search or working area.
8	Communications	8.1	Be able to communicate boat-to-boat and boat-to-shore using hand and whistle signals.	Hand signals: Ok, distress, point positive, medical, hold station. Whistle: attention, upstream, downstream, distress.
		8.2	Apply simple commands in order to centralise command within the boat.	Commands for changing trim, tying or untying the boat, exiting or entering the boat should all come from the helm.
9	Crew operational roles	9.1	Explain the primary roles of helm, bowman and rescuer within a rescue boat, and their duties.	Helm: overall control, clear comms. Bowman: directions (points positive) and information for the helm. Rescuer: hands on casualty, enters the water if required.
		9.2	Apply crew roles when performing a variety of tasks.	Clear communication and allocation of roles.



	Skill sheet element		Learning outcome	Key teaching points
10	Boat, hull and drive types	10.1	Identify how different hull types and construction will affect performance and deployment.	Weight and size of boat. Resilience to damage. Manoeuvrability, acceleration and fuel efficiency.
		10.2	Identify different types of drive units and fuel requirements.	2 stroke/4 stroke. Props, prop guards and jet drives advantages and disadvantages.
11	Rescue boat equipment	11.1	Select and use appropriate equipment required for powerboat operations.	Boat kit: Engine, prop guard. 2 separate fuel bladders. Keys, kill cord and spares. Paddles. Navigation equipment, eg maps, charts, sat nav, GPS. Fire extinguisher. First aid kit. Comms. Lighting for boat. Bowline. Pump. Tools, repair kit and spares. Towing kit. Anchor. Inshore flare pack. Technical rescue equipment: semi-static floating line, slings/tapes, karabiners, rope grabs, pulleys. Welfare pack. Short throwbag. Task specific: Stretcher, ladder, additional long lines, O2, defib.
		11.2	Recall post-use care and inspection procedures for equipment.	Wash down kit with clean water. Look for obvious signs of damage.
		11.3	Based on tasking, differentiate between mandatory equipment and optional equipment.	Ladder and stretcher. High powered lamps.
12	Pre- and post-trip checks	12.1	Perform systematic checks of boat/hull, fuel and engine system, and auxiliary equipment.	Obvious holes, wear or damage. Boat pressure. Fuel leakage. Linkages: gear and throttle. Prop damage and split pin. Prop guard.
		12.2	Prep equipment in order to give a clean working space within the boat.	All equipment secured into the boat.
		12.3	Run through pre-start checks prior to starting engine.	Fuel: quantity and connection. Kill cord. Neutral.
		12.4	Perform post-trip checks.	Including flushing engine through with clean water.
13	Launching and recovery	13.1	Identify considerations when launching and recovering via trailer.	Terrain. Vehicle access, hand roll or rope lower.
		13.2	Identify hand launch considerations, including manual handling.	Move boat as a whole. Move engine, boat and equipment separately.
		13.3	Identify how changing conditions and deployment will affect launching/recovery site choice.	Water levels. Time pressures. Light. Weather.



	Skill sheet element		Learning outcome	Key teaching points
14	Boat handling under power	14.1	Identify the importance of trim when in displacement and planing mode, and use crew in order to apply trim.	Weight shift forward or backward. Balance side to side.
		14.2	Be able to control momentum when travelling forwards and in reverse, identifying how changes in drive and trim affect steerage and pivot of boat.	Appropriate space. Allow for drift.
		14.3	Be able to change direction of the boat at speed in wider areas and low speed in confined areas.	Appropriate space and tiller lock.
		14.4	Manage boat and crew when coming to or leaving shallow areas, buoy/moorings, and other vessels.	Communication from the helm.
		14.5	Explain the terms ground speed and water speed, and why they are important with boat handling.	Using markers on land to check speed over ground.
		14.6	Be able to hold station in a flat or slow-moving environment.	Hold position in the flow. No upstream/downstream or side to side movement. Prevent drift, no accidental movement.
15	Boat handling with paddles	15.1	Identify application for paddle skills.	Self rescue. Access: shallow water/debris.
		15.2	Identify the importance of correct trim and power distribution.	Timing and trim for efficiency.
		15.3	Be able to paddle forwards, backwards and turn.	Time it takes to generate momentum. Awareness of boat spin.
		15.4	Recognise the importance of applying angle before momentum.	Planning for future water.
		15.5	Apply simple command within the boat in order to achieve simple objectives.	One person takes charge, specific paddle commands.
16	Towing	16.1	Perform both line astern and alongside tows.	Advantages/disadvantages, application of each.
		16.2	Identify variables that influence choice between line astern and alongside tows.	Space to manoeuvre. Distance to travel. Water conditions.
		16.3	Identify areas that will require management.	Fuel usage, damage to vessels, tensioned lines and weight distribution.



	Skill sheet element		Learning outcome	Key teaching points
17	Anchoring/ securing	17.1	Identify why anchoring/ securing a rescue boat would be required.	Casualty recovery. Downstream containment. Switch to SRT rescue.
		17.2	Recognise types of tethers/ anchors depending on area, boat size and design.	Size of anchor and type eg mud.
		17.3	Perform deployment, including measurement of depth and checks to ensure anchor is holding.	Space: allow for swing.
18	Considerations for night/ poor visibility operations	18.1	Identify problems associated with hazard recognition, group control and application of rescue techniques during night/ poor visibility operations.	Depth perception. Comms. Line of sight. Awareness of speed over ground. Water depth. Debris.
		18.2	Identify control measures that may be required when operating boats in darkness.	Slower travelling speeds. Personal, scene and boat lighting. Buddy system and roll call.
19	Search considerations	19.1	Explain how untethered boats could be incorporated into the search process.	Containment. Primary search. Transport for searchers. Platform for secondary search. Transport for casualty evacuation.
20	Team/personal recovery	20.1	Identify reasoning behind team/self-rescue ability.	Recovery from rescue or malfunction. Reduces task loading on other crew members.
		20.2	Perform team-based rescue (or self-rescue) over sponson whilst in deep water.	Boat set up: handles, safety line, size of sponsons.
21	Casualty pick-up and recovery	21.1	Allocate roles for casualty pick- up and recovery.	Rescuer and bowman. Position should not obscure the helm's view.
		21.2	Use environmental factors in order to make a controlled approach.	Approach into the strongest element: wind or flow.
		21.3	Manage the hazard of the engine and the casualty in the water.	Helm must use neutral to protect people in the water. Tiller should be pushed away from the casualty.
		21.4	Recover casualties into boat using forwards- and backwards- facing techniques, and rolling.	Method of recovery should be based in water speed, depth and hazards, and the nature of the casualty's injuries.
22	Casualty management	22.1	Identify priorities for casualty care.	Breathing, temperature and major trauma.
		22.2	Describe how casualty care would impact on boat handling, length of transit and operation.	Reduced capability of helm and crew. More load will affect engine performance.
		22.3	Identify suitable placement of casualty once aboard and how medical stabilisation would influence this.	Feet up or feet down. Temperature concerns: compression of packaging by wind.



	Skill sheet element		Learning outcome	Key teaching points
23	Boat-based conditional rescues	23.1	Identify how addition of conditional rescue tools will aid the helm's margin for error.	Use of paddle or throwline to create space between boat and casualty.
		23.2	Identify environmental and casualty variables that will influence the choice of rescue.	Conscious/unconscious. In water hazards, Turbulent water.
		23.3	Perform conditional rescues from a boat, applying control measures in order to reduce risk to personnel and casualty.	Rope management. Engine neutral.
24	Boat-based stretcher management	24.1	Perform risk assessment of environmental conditions and casualty requirements.	Water speed, hazards. Nature of the casualty's injuries.
		24.2	Identify the different types of stretcher to be used and issues within the boat to be used.	Metal vs plastic. Two piece/single piece. Clean profile/snags.
		24.3	Identify pros and cons/risks of strapping casualty into stretcher/stretcher to boat.	Boat, crew, environment, water energy, nature of casualties injuries.
		24.4	Identify best placement and securing of stretcher within different boat types.	Advantages/disadvantages of on the floor/across the sponsons.



Rescue Boat Operator (RBO) training site and equipment list

Training site

For rescue boat operations (RBO and FRBO elements), the training site should be a flat or slow-moving water environment. The training site should be such that there is no risk of damage to boat and equipment, or injury to crew, if there is a loss of motor propulsion, eg they would be able to paddle to shore with their emergency paddles easily.

Team equipment

The training provider must provide the following for each working group:

- Suitably equipped rescue boat
- All boats must have a prop guard
- Appropriate vehicle, trailer or launching trolley
- Fuel, tools and spare parts for emergency repairs
- First aid, crew welfare and emergency shelter kit
- Whiteboard and marker pens
- Emergency distress kit
- Radio/communication ability
- Appropriate ropes for tethered ropework
- Karabiners
- Pulleys
- Tape slings

Personal equipment

The students must bring (if not provided by the training provider)

- Drysuit or suitable waterproof protective clothing
- PFD
- Thermal undersuit
- Protective footwear
- Marine water safety helmet - PAS 028:20021
- Gloves
- Eye protection
- Knife
- Waterproof notepad

1 Whilst there is no established inland powerboat helmet standard, the marine safety helmet standard PAS 028:2002 is the most appropriate for inland powerboat use.





Flood Rescue Boat Operator (FRBO)

Course overview and target audience

The Flood Rescue Boat Operator training course is a 3-day course which incorporates all elements of the RBO course and adds flood rescue capability. It is ideal for any emergency service personnel who may attend flood events with boats for low level casualty and victim recovery from a flood or slow moving water environment.

Contact hours 18 hours (3 days) or 6 hours (1 day) add-on to RBO qualification or 12 hours (2 day) add-on to International Certificate of Competence or equivalent national course, eg RYA powerboating level 2	Prerequisites Swiftwater and Flood First Responder (SFR) Minimum age: 18.
Qualification valid for 3 years	Accredited by Rescue 3 Europe

Taught by

- Flood Rescue Boat Operator Instructor (FRBOI)
- Swiftwater and Flood Rescue Boat Operator Instructor (SFRBOI)

FRBO

Assessment

The assessed elements of this course are:

- Foundation knowledge
- Boat handling under power
- Boat handling with paddles
- Team/personal recovery
- Casualty pick-up and recovery



Flood Rescue Boat Operator (FRBO) skill sheet contents

Theory	
1. Rescue 3 philosophy	
2. Water rescue training standards	
3. Personal equipment	
4. Dynamic risk assessment and incident size-up	
5. Pre-planning	
6. Medical and decontamination considerations	
7. Navigation and route planning	
8. Communications	
9. Crew operational roles	
10. Multiple boat operations	
11. Floodwater dynamics and hazards	
12. Boat, hull and drive types	
13. Rescue boat equipment	
14. Pre- and post-trip checks	
15. Vehicles in water	
16. Working with helicopters	
Practical	
17. Launching and recovery	
18. Boat handling under power	
19. Boat handling with paddles	
20. Towing	
21. Anchoring/securing	
22. Wading with boats	
23. Tethered boats	
24. Night/poor visibility operations	
25. Search operations	
26. Team/personal recovery	
27. Casualty pick-up and recovery	
28. Casualty management	
29. Boat-based conditional rescues	
30. Transporting loads	
31. Boat-based stretcher management	
32. Rescues from elevated positions	



Flood Rescue Boat Operator (FRBO) learning outcomes and key teaching points

When delivering the FRBO course modularly (eg as an add-on to a current, valid RBO qualification), the instructor should revisit, eg through discussion, those learning outcomes that have been covered on the previous course, to confirm the student's knowledge.

	Skill sheet element		Learning outcome	Key teaching points
1	Rescue 3 philosophy	1.1	Explain the order of priorities at a water rescue scene.	Self > team > victim.
		1.2	Recall the steps required in order to develop judgement.	Training. Practice. Experience. Judgement.
		1.3	Apply best practice guidelines to powerboat operations, in order to produce safe working practice.	Always have a backup plan: downstream exit for engine failure.
2	Water rescue training standards	2.1	Recognise the different levels of training with the Rescue 3 scheme, and identify the role of a boat at a rescue scene.	RBO, FRBO, SFRBO. Greater capability for access and transportation.
		2.2	State how the Rescue 3 scheme fits within national and international standards.	Rescue 3 standards, eg NFPA, DEFRA.
		2.3	Identify where powerboats fit into rescue options.	Deep water, expansive flooding, swiftwater, multiple transfers of welfare and people.
3	Personal equipment	3.1	Identify PPE and equipment used for in-water operations by rescue boat operators.	PPE: Buoyancy aid, helmet, eye protection, throwbag, drysuit, boots, gloves, thermal layers. Boat kit: Engine, prop guard. 2 separate fuel bladders. Keys, kill cord and spares. Paddles. Navigation equipment, eg maps, charts, sat nav, GPS. Fire extinguisher. First aid kit. Comms. Lighting for boat. Bowline. Pump. Tools, repair kit and spares. Towing kit. Anchor. Inshore flare pack. Technical rescue equipment: semi-static floating line, slings/tapes, karabiners, rope grabs, pulleys. Welfare pack. Short throwbag. Task specific: Stretcher, ladder, additional long lines, O2, defib.
		3.2	Select appropriate PPE for a rescue boat operator, dress and perform buddy checks.	PPE list, buddy checks.

FRBO



	Skill sheet element		Learning outcome	Key teaching points
4	Dynamic risk assessment and incident size-up	4.1	Ensure appropriate redundancy for passage plan and potential environmental changes.	Back up plan for engine failure, multiple boats, direction of flow, changes in weather/water level.
		4.2	Perform a risk assessment of the following areas: rescue site, downstream and upstream.	Depth of water, debris, hazards.
		4.3	Based on risk assessment of environment and casualty requirements, select an appropriate plan.	Is a boat or SFR solution needed?
5	Pre-planning	5.1	Identify sources of information useful for pre-planning powerboat operations.	River guides (online and books), tide tables (online and booklet), online river gauges.
		5.2	Describe key information that should be included within a pre-plan specific to powerboat.	Slipway access/egress, alternative access/egress if no slipway. Access to water level information. Task specific kit list. Emergency RV.
6	Medical and decontamination considerations	6.1	Identify priorities when dealing with casualties from both mid-water and a dry location.	Temperature and major trauma.
		6.2	Apply techniques which minimise exposure to the water and decontamination procedures.	Remain in the boat to minimise exposure to HAZMAT. Gels, wipes and sprays post-exposure.
7	Navigation and route planning	7.1	Apply International Regulations for the Prevention of Collisions at Sea (IRPCS) in order to safely operate powerboats under a variety of light conditions.	Head on situation: pass port to port (steer right). Give way to the right. Power gives way to unpowered craft.
		7.2	Orient map to ground and identify how water level changes will affect information represented on map/chart.	Loss or gain of access with changes of water level.
		7.3	Using an appropriate information source, identify tick features that will be seen en route.	Passage plan. Return to last point if visibility or comms are lost.
		7.4	Using a map/chart, confirm when at an objective.	Three reasons that confirm your position.
		7.5	Be able to use a sat nav unit in a flooded urban environment.	Use of sat nav.
		7.6	Use stop/catch features when planning a route.	Large features that identify the end of a search or working area.



	Skill sheet element		Learning outcome	Key teaching points
8	Communications	8.1	Be able to communicate boat-to-boat and boat-to-shore using hand and whistle signals.	Hand signals: Ok, distress, point positive, medical, hold station. Whistle: attention, upstream, downstream, distress.
		8.2	Apply simple commands in order to centralise command within the boat.	Commands for changing trim, tying or untying the boat, exiting or entering the boat should all come from the helm.
9	Crew operational roles	9.1	Explain the primary roles of helm, bowman and rescuer within a rescue boat, and their duties.	Helm: overall control, clear comms. Bowman: directions (points positive) and information for the helm. Rescuer: hands on casualty, enters the water if required.
		9.2	Apply crew roles when performing a variety of tasks.	Clear communication and allocation of roles.
10	Multiple boat operations	10.1	Identify the roles and the benefits of working with multiple boats.	Different sized boats for different access and/or load carrying abilities. Downstream cover/containment.
		10.2	Explain how working with multiple boats adds resilience to operations.	Back up for damaged boats/engines.
11	Floodwater dynamics and hazards	11.1	Identify the physical impact of water flowing within an urban area.	Loss of access/egress. Food and medicine shortage. Loss of power and clean water supply.
		11.2	Identify how public services and infrastructure will contribute to physical, chemical and biological hazards within flooding.	HAZMAT considerations. Strainers and sharps. Underwater obstacles: ledges, bollards, steps.
		11.3	Explain the effect of these on rescue boats operating in floodwater.	Sudden changes in depth. Hazards may damage the prop/engine. Puncture boat. Boat may get stuck or wrapped.
12	Boat, hull and drive types	12.1	Identify how different hull types and construction will affect performance and deployment.	Weight and size of boat. Resilience to damage. Manoeuvrability, acceleration and fuel efficiency.
		12.2	Identify different types of drive units and fuel requirements.	2 stroke/4 stroke. Props, prop guards and jet drives advantages and disadvantages.



	Skill sheet element		Learning outcome	Key teaching points
13	Rescue boat equipment	13.1	Select and use appropriate equipment required for powerboat operations.	Boat kit: Engine, prop guard. 2 separate fuel bladders. Keys, kill cord and spares. Paddles. Navigation equipment, eg maps, charts, sat nav, GPS. Fire extinguisher. First aid kit. Comms. Lighting for boat. Bowline. Pump. Tools, repair kit and spares. Towing kit. Anchor. Inshore flare pack. Technical rescue equipment: semi-static floating line, slings/tapes, karabiners, rope grabs, pulleys. Welfare pack. Short throwbag. Task specific: Stretcher, ladder, additional long lines, O2, defib.
		13.2	Recall post-use care and inspection procedures for equipment.	Wash down kit with clean water. Look for obvious signs of damage.
		13.3	Based on tasking, differentiate between mandatory equipment and optional equipment.	Ladder and stretcher. High powered lamps.
14	Pre- and post-trip checks	14.1	Perform systematic checks of boat/hull, fuel and engine system, and auxiliary equipment.	Obvious holes, wear or damage. Boat pressure. Fuel leakage. Linkages: gear and throttle. Prop damage and split pin. Prop guard.
		14.2	Prep equipment in order to give a clean working space within the boat.	All equipment secured into the boat.
		14.3	Run through pre-start checks prior to starting engine.	Fuel: quantity and connection. Kill cord. Neutral.
		14.4	Perform post-trip checks.	Including flushing engine through with clean water.
15	Vehicles in water	15.1	Identify why vehicles in water are a common occurrence in a flood event.	Deliberate or misadventure.
		15.2	Describe forces acting on a vehicle in water.	Water flow, depth, vehicle mass and surface traction.
		15.3	Describe boat and vehicle interaction, stability of vehicles, and direction of approach options.	Boat wake. Accidental contact. Potential for vehicle to move.
16	Working with helicopters	16.1	Describe the benefits and hazards of working with helicopters.	Possibly the only option. Downdraft.
		16.2	Identify the impact of a helicopter on the operations scene and craft.	Clearing the area. Securing equipment. Debris.



	Skill sheet element		Learning outcome	Key teaching points
17	Launching and recovery	17.1	Identify considerations when launching and recovering via trailer.	Terrain. Vehicle access, hand roll or rope lower.
		17.2	Identify hand launch considerations, including manual handling.	Move boat as a whole. Move engine, boat and equipment separately.
		17.3	Identify how changing conditions and deployment will affect launching/recovery site choice.	Water levels. Time pressures. Light. Weather.
18	Boat handling under power	18.1	Identify the importance of trim when in displacement and planing mode, and use crew in order to apply trim.	Weight shift forward or backward. Balance side to side.
		18.2	Be able to control momentum when travelling forwards and in reverse, identifying how changes in drive and trim affect steerage and pivot of boat.	Appropriate space. Allow for drift.
		18.3	Be able to change direction of the boat at speed in wider areas and low speed in confined areas.	Appropriate space and tiller lock.
		18.4	Manage boat and crew when coming to or leaving shallow areas, buoy/moorings, and other vessels.	Communication from the helm.
		18.5	Explain the terms ground speed and water speed, and why they are important with boat handling.	Using markers on land to check speed over ground.
		18.6	Be able to hold station in a slow-moving floodwater environment.	Hold position in the flow. No upstream/downstream or side to side movement. Prevent drift, no accidental movement.
		18.7	Describe the use of a variety of angles relative to the current vector when dealing with downstream flow, eddies and flow around obstacles in a slow-moving floodwater environment.	Cross flow without unintentional upstream/downstream movement. Predict the effect future water will have on the boat.
		18.8	Perform direct and indirect break-ins, and direct outs, comparing the different methods, and selecting an appropriate technique depending on task.	Water speed, boat speed., Size and depth of eddy.



	Skill sheet element		Learning outcome	Key teaching points
19	Boat handling with paddles	19.1	Identify application for paddle skills.	Self rescue. Access: shallow water/debris.
		19.2	Identify the importance of correct trim and power distribution.	Timing and trim for efficiency.
		19.3	Be able to paddle forwards, backwards and turn.	Time it takes to generate momentum. Awareness of boat spin.
		19.4	Recognise the importance of applying angle before momentum.	Planning for future water.
		19.5	Apply simple command within the boat in order to achieve simple objectives.	One person takes charge, specific paddle commands.
20	Towing	20.1	Perform both line astern and alongside tows.	Advantages/disadvantages, application of each.
		20.2	Identify variables that influence choice between line astern and alongside tows.	Space to manoeuvre. Distance to travel. Water conditions.
		20.3	Identify areas that will require management.	Fuel usage, damage to vessels, tensioned lines and weight distribution.
21	Anchoring/securing	21.1	Identify why anchoring/securing a rescue boat would be required.	Casualty recovery. Downstream containment. Switch to SRT rescue.
		21.2	Recognise types of tethers/anchors depending on area, boat size and design.	Size of anchor and type eg mud.
		21.3	Perform deployment, including measurement of depth and checks to ensure anchor is holding.	Space: allow for swing.
22	Wading with boats	22.1	Explain how a floating platform will aid rescuers within a wading rescue.	Transport of casualties, equipment and welfare supplies.
		22.2	Identify the risks of wading with a boat and steps taken to minimise these.	Entrapment, manholes and drains: wading poles paddles. Cold and HAZMAT: PPE.
		22.3	Perform wading rescues with the aid of a floating platform.	Use of floating platform, with consideration for hazards.
		22.4	Identify the environmental variables and hazards that will directly affect wading with boats.	Water speed, depth, terrain and debris.



	Skill sheet element		Learning outcome	Key teaching points
23	Tethered boats	23.1	Compare the application and limitations of single, 2- and 4-point tethered systems.	Resources/personnel. Bank access/terrain. Hazards precluding engine use.
		23.2	Use appropriate anchors/belay methods for water energy and consequence.	Advantages/disadvantages of hand-held, Italian hitch and I'D belay.
		23.3	Use a tethered boat for transportation and mid-stream access.	Resettable pendulum: people/welfare supplies. Pick off rescue.
24	Night/poor visibility operations	24.1	Identify problems associated with hazard recognition, group control and application of rescue techniques during night/poor visibility operations.	Depth perception. Comms. Line of sight. Awareness of speed over ground. Water depth. Debris.
		24.2	Identify control measures that may be required when operating boats in slow-moving floodwater in darkness.	Slower travelling speeds. Personal, scene and boat lighting. Buddy system and roll call.
		24.3	Implement these control measures in order to successfully perform static and mobile rescues.	Spot light casualties. Do not lose sight of casualty.
25	Search operations	25.1	Explain how untethered boats could be incorporated into the search process.	Containment. Primary search. Transport for searchers. Platform for secondary search. Transport for casualty evacuation.
		25.2	Use boats to identify key landmarks that define the search area.	Start and finish of search area. Containment.
		25.3	Construct deployment strategy to perform reconnaissance, a hasty (low coverage) search, and a high coverage search.	Passage plan. Key landmarks - attack points. Additional equipment that may be required for high coverage search.
26	Team/personal recovery	26.1	Identify reasoning behind team/self-rescue ability.	Recovery from rescue or malfunction. Reduces task loading on other crew members.
		26.2	Perform team-based rescue (or self-rescue) over sponson whilst in deep water.	Boat set up: handles, safety line, size of sponsons.



	Skill sheet element		Learning outcome	Key teaching points
27	Casualty pick-up and recovery	27.1	Allocate roles for casualty pick-up and recovery.	Rescuer and bowman. Position should not obscure the helm's view.
		27.2	Use environmental factors in order to make a controlled approach.	Approach into the strongest element: wind or flow.
		27.3	Manage the hazard of the engine and the casualty in the water.	Helm must use neutral to protect people in the water. Tiller should be pushed away from the casualty.
		27.4	Recover casualties into boat using forwards- and backwards-facing techniques, and rolling.	Method of recovery should be based in water speed, depth and hazards, and the nature of the casualty's injuries.
28	Casualty management	28.1	Identify priorities for casualty care.	Breathing, temperature and major trauma.
		28.2	Describe how casualty care would impact on boat handling, length of transit and operation.	Reduced capability of helm and crew. More load will affect engine performance.
		28.3	Identify suitable placement of casualty once aboard and how medical stabilisation would influence this.	Feet up or feet down. Temperature concerns: compression of packaging by wind.
29	Boat-based conditional rescues	29.1	Identify how addition of conditional rescue tools will aid the helm's margin for error.	Use of paddle or throwline to create space between boat and casualty.
		29.2	Identify environmental and casualty variables that will influence the choice of rescue.	Conscious/unconscious. In water hazards, Turbulent water.
		29.3	Perform conditional rescues from a boat, applying control measures in order to reduce risk to personnel and casualty.	Rope management. Engine neutral.
30	Transporting loads	30.1	Identify content of briefing and safety provision for casualties or third parties.	Position in boat. No big movements. Stay low, hold on.
		30.2	Describe how boat stability is affected during loading/unloading of casualties and loads.	Additional load may unsettle boat trim.
		30.3	Describe how boat performance and handling is affected when loaded.	Boats ability to hold station and drive upstream. Tubes lower to the water.
		30.4	Identify the risks involved when securing loads in rescue boats.	Likelihood and consequence of a flip.



	Skill sheet element		Learning outcome	Key teaching points
31	Boat-based stretcher management	31.1	Perform risk assessment of environmental conditions and casualty requirements.	Water speed, hazards. Nature of the casualty's injuries.
		31.2	Identify the different types of stretcher to be used and issues within the boat to be used.	Metal vs plastic. Two piece/single piece. Clean profile/snags.
		31.3	Identify pros and cons/risks of strapping casualty into stretcher/stretcher to boat.	Boat, crew, environment, water energy, nature of casualties injuries.
		31.4	Identify best placement and securing of stretcher within different boat types.	Advantages/disadvantages of on the floor/across the sponsons.
32	Rescues from elevated positions	32.1	Identify different applications for use of ladders from boats.	Welfare checks and evacuation in flooding. Pick off rescues from bridge stanchions/walls. Use in benign environments only. Are other options available, eg foot ladder in water, not in boat?
		32.2	Identify methods of stabilising the boat whilst using ladders from them.	Bolt gun, slings/strops, paddle braced through a window, tied off bow line, another boat.
		32.3	Identify methods of stabilising ladders whilst using them from a boat.	Footed in features of the boat, tied off, footed into another length of ladder.
		32.4	Describe changes that will affect the stability of the ladder and boat.	Water level and speed - ladders should only be used in benign environments. Debris in prop. Engine failure. Weighting the ladder.
		32.5	Demonstrate clear communication between helm and rescuer when ladder is being weighted.	Helm must apply additional revs and ensure boat angle is correct before the ladder is weighted.



Flood Rescue Boat Operator (FRBO) training site and equipment list

Training site

For rescue boat operations (RBO and FRBO elements), the training site should be a flat or slow-moving water environment. The training site should be such that there is no risk of damage to boat and equipment, or injury to crew, if there is a loss of motor propulsion, eg they would be able to paddle to shore with their emergency paddles easily.

Team equipment

The training provider must provide the following for each working group:

- Suitably equipped rescue boat
- All boats must have a prop guard
- Appropriate vehicle, trailer or launching trolley
- Fuel, tools and spare parts for emergency repairs
- First aid, crew welfare and emergency shelter kit
- Whiteboard and marker pens
- Emergency distress kit
- Radio/communication ability
- Appropriate ropes for tethered ropework
- Karabiners
- Pulleys
- Tape slings

Personal equipment

The students must bring (if not provided by the training provider)

- Drysuit or suitable waterproof protective clothing
- PFD
- Thermal undersuit
- Protective footwear
- Throwline and suitable quick release belt
- Marine water safety helmet - PAS 028:20021
- Gloves
- Eye protection
- Knife
- Waterproof notepad

1 Whilst there is no established inland powerboat helmet standard, the marine safety helmet standard PAS 028:2002 is the most appropriate for inland powerboat use.



Swiftwater and Flood Rescue Boat Operator (SFRBO)

Course overview and target audience

The Swiftwater and Flood Rescue Boat Operator training course is intended for emergency services or rescue teams who will be required to carry out rescues in a swiftwater and flood environment. This course incorporates all elements from the FRBO course and adds a swiftwater capability suitable for fast moving rivers and flash flood conditions. It is based on the philosophy of self-protection and application of low to high risk solutions.

Contact hours 30 hours (5 days) or 24 hours (4 days) add-on to RBO qualification or 24 hours (4 days) add-on to International Certificate of Competence or equivalent national course, eg RYA powerboating level 2 or 18 hours (3 days) add-on to FRBO qualification	Prerequisites Swiftwater and Flood Rescue Technician (SRT) Minimum age: 18.
Qualification valid for 3 years	Accredited by Rescue 3 Europe

SFRBO

Taught by

- Swiftwater and Flood Rescue Boat Operator Instructor (SFRBOI)

Defra level

Module 4 - Water Rescue Power Boat Operator - Rescue boat operation

Assessment

The assessed elements of this course are:

- Foundation knowledge
- Boat handling under power
- Boat handling with paddles
- Team/personal recovery
- Casualty pick-up and recovery
- Flips and rights



Swiftwater and Flood Rescue Boat Operator (SFRBO) skill sheet contents

Theory	
1. Rescue 3 philosophy	
2. Water rescue training standards	
3. Personal equipment	
4. Dynamic risk assessment and incident size-up	
5. Pre-planning	
6. Medical and decontamination considerations	
7. Navigation and route planning	
8. Communications	
9. Crew operational roles	
10. Multiple boat operations	
11. Floodwater dynamics and hazards	
12. Boat, hull and drive types	
13. Rescue boat equipment	
14. Pre- and post-trip checks	
15. Vehicles in water	
16. Working with helicopters	
17. Boat wraps	
18. Hydraulic and weir considerations	
Practical	
19. Launching and recovery	
20. Boat handling under power	
21. Boat handling with paddles	
22. Towing	
23. Anchoring/securing	
24. Wading with boats	
25. Tethered boats	
26. Night/poor visibility operations	
27. Search operations	
28. Flips and rights	
29. Team/personal recovery	
30. Casualty pick-up and recovery	
31. Casualty management	
32. Boat-based conditional rescues	
33. Transporting loads	
34. Boat-based stretcher management	
35. Rescues from elevated positions	
36. Boat-based tethered rescues	



Swiftwater and Flood Rescue Boat Operator (SFRBO) learning outcomes and key teaching points

When delivering the SFRBO course modularly (eg as an add-on to a current, valid RBO qualification), the instructor should revisit, eg through discussion, those learning outcomes that have been covered on the previous course, to confirm the student's knowledge.

	Skill sheet element		Learning outcome	Key teaching points
1	Rescue 3 philosophy	1.1	Explain the order of priorities at a water rescue scene.	Self > team > victim.
		1.2	Recall the steps required in order to develop judgement.	Training. Practice. Experience. Judgement.
		1.3	Apply best practice guidelines to powerboat operations, in order to produce safe working practice.	Always have a backup plan: downstream exit for engine failure.
2	Water rescue training standards	2.1	Recognise the different levels of training with the Rescue 3 scheme, and identify the role of a boat at a rescue scene.	RBO, FRBO, SFRBO. Greater capability for access and transportation.
		2.2	State how the Rescue 3 scheme fits within national and international standards.	Rescue 3 standards, eg NFPA, DEFRA.
		2.3	Identify where powerboats fit into rescue options.	Deep water, expansive flooding, swiftwater, multiple transfers of welfare and people.
3	Personal equipment	3.1	Identify PPE and equipment used for in-water operations by rescue boat operators.	PPE: Buoyancy aid, helmet, eye protection, throwbag, drysuit, boots, gloves, thermal layers. Boat kit: Engine, prop guard. 2 separate fuel bladders. Keys, kill cord and spares. Paddles. Navigation equipment, eg maps, charts, sat nav, GPS. Fire extinguisher. First aid kit. Comms. Lighting for boat. Bowline. Pump. Tools, repair kit and spares. Towing kit. Anchor. Inshore flare pack. Technical rescue equipment: semi-static floating line, slings/tapes, karabiners, rope grabs, pulleys. Welfare pack. Short throwbag. Task specific: Stretcher, ladder, additional long lines, O2, defib.
		3.2	Select appropriate PPE for a rescue boat operator, dress and perform buddy checks.	PPE list, buddy checks.

SFRBO



	Skill sheet element		Learning outcome	Key teaching points
4	Dynamic risk assessment and incident size-up	4.1	Ensure appropriate redundancy for passage plan and potential environmental changes.	Back up plan for engine failure, multiple boats, direction of flow, changes in weather/water level.
		4.2	Perform a risk assessment of the following areas: rescue site, downstream and upstream.	Depth of water, debris, hazards.
		4.3	Based on risk assessment of environment and casualty requirements, select an appropriate plan.	Is a boat or SRT solution needed?
5	Pre-planning	5.1	Identify sources of information useful for pre-planning powerboat operations.	River guides (online and books), tide tables (online and booklet), online river gauges.
		5.2	Describe key information that should be included within a pre-plan specific to powerboat.	Slipway access/egress, alternative access/egress if no slipway. Access to water level information. Task specific kit list. Emergency RV.
6	Medical and decontamination considerations	6.1	Identify priorities when dealing with casualties from both mid-water and a dry location.	Temperature and major trauma.
		6.2	Apply techniques which minimise exposure to the water and decontamination procedures.	Remain in the boat to minimise exposure to HAZMAT. Gels, wipes and sprays post-exposure.
7	Navigation and route planning	7.1	Apply International Regulations for the Prevention of Collisions at Sea (IRPCS) in order to safely operate powerboats under a variety of light conditions.	Head on situation: pass port to port (steer right). Give way to the right. Power gives way to unpowered craft.
		7.2	Orient map to ground and identify how water level changes will affect information represented on map/chart.	Loss or gain of access with changes of water level.
		7.3	Using an appropriate information source, identify tick features that will be seen en route.	Passage plan. Return to last point if visibility or comms are lost.
		7.4	Using a map/chart, confirm when at an objective.	Three reasons that confirm your position.
		7.5	Be able to use a sat nav unit in a flooded urban environment.	Use of sat nav.
		7.6	Use stop/catch features when planning a route.	Large features that identify the end of a search or working area.
8	Communications	8.1	Be able to communicate boat-to-boat and boat-to-shore using hand and whistle signals.	Hand signals: Ok, distress, point positive, medical, hold station. Whistle: attention, upstream, downstream, distress.
		8.2	Apply simple commands in order to centralise command within the boat.	Commands for changing trim, tying or untying the boat, exiting or entering the boat should all come from the helm.



	Skill sheet element		Learning outcome	Key teaching points
9	Crew operational roles	9.1	Explain the primary roles of helm, bowman and rescuer within a rescue boat, and their duties.	Helm: overall control, clear comms. Bowman: directions (points positive) and information for the helm. Rescuer: hands on casualty, enters the water if required.
		9.2	Apply crew roles when performing a variety of tasks.	Clear communication and allocation of roles.
10	Multiple boat operations	10.1	Identify the roles and the benefits of working with multiple boats.	Different sized boats for different access and/or load carrying abilities. Downstream cover/containment.
		10.2	Explain how working with multiple boats adds resilience to operations.	Back up for damaged boats/engines.
11	Floodwater dynamics and hazards	11.1	Identify the physical impact of water flowing within an urban area.	Loss of access/egress. Food and medicine shortage. Loss of power and clean water supply.
		11.2	Identify how public services and infrastructure will contribute to physical, chemical and biological hazards within flooding.	HAZMAT considerations. Strainers and sharps. Underwater obstacles: ledges, bollards, steps.
		11.3	Explain the effect of these on rescue boats operating in floodwater.	Sudden changes in depth. Hazards may damage the prop/engine. Puncture boat. Boat may get stuck or wrapped.
12	Boat, hull and drive types	12.1	Identify how different hull types and construction will affect performance and deployment.	Weight and size of boat. Resilience to damage. Manoeuvrability, acceleration and fuel efficiency.
		12.2	Identify different types of drive units and fuel requirements.	2 stroke/4 stroke. Props, prop guards and jet drives advantages and disadvantages.



	Skill sheet element		Learning outcome	Key teaching points
13	Rescue boat equipment	13.1	Select and use appropriate equipment required for swiftwater powerboat operations.	Boat kit: Engine, prop guard. 2 separate fuel bladders. Keys, kill cord and spares. Paddles. Navigation equipment, eg maps, charts, sat nav, GPS. Fire extinguisher. First aid kit. Comms. Lighting for boat. Bowline. Pump. Tools, repair kit and spares. Towing kit. Anchor. Inshore flare pack. Technical rescue equipment: semi-static floating line, slings/tapes, karabiners, rope grabs, pulleys. Welfare pack. Short throwbag. Task specific: Stretcher, ladder, additional long lines, O2, defib.
		13.2	Recall post-use care and inspection procedures for equipment.	Wash down kit with clean water. Look for obvious signs of damage.
		13.3	Based on tasking, differentiate between mandatory equipment and optional equipment.	Ladder and stretcher. High powered lamps.
14	Pre- and post-trip checks	14.1	Perform systematic checks of boat/hull, fuel and engine system, and auxiliary equipment.	Obvious holes, wear or damage. Boat pressure. Fuel leakage. Linkages: gear and throttle. Prop damage and split pin. Prop guard.
		14.2	Prep equipment in order to give a clean working space within the boat.	All equipment secured into the boat.
		14.3	Run through pre-start checks prior to starting engine.	Fuel: quantity and connection. Kill cord. Neutral.
		14.4	Perform post-trip checks.	Including flushing engine through with clean water.
15	Vehicles in water	15.1	Identify why vehicles in water are a common occurrence in a flood event.	Deliberate or misadventure.
		15.2	Describe forces acting on a vehicle in water.	Water flow, depth, vehicle mass and surface traction.
		15.3	Describe boat and vehicle interaction, stability of vehicles, and direction of approach options.	Boat wake. Accidental contact. Potential for vehicle to move.
16	Working with helicopters	16.1	Describe the benefits and hazards of working with helicopters.	Possibly the only option. Downdraft.
		16.2	Identify the impact of a helicopter on the operations scene and craft.	Clearing the area. Securing equipment. Debris.



	Skill sheet element		Learning outcome	Key teaching points
17	Boat wraps	17.1	Explain how risk assessment and boat control will minimise the likelihood of a wrap.	Position relative to obstacles. Trim to protect upstream tube.
		17.2	Identify how the movement of weight may help to unbalance a wrap.	Movement to bow or stern. Bouncing
		17.3	Recall the application of rope systems for evacuation, and unwrapping through peel and pull techniques.	Direction of pull is critical.
18	Hydraulic and weir considerations	18.1	Perform risk assessments of a hydraulic and a weir, identifying key variables that will affect a swimmer, rescuers and boats (powered and unpowered).	Angle of face. Length of towback. Open/closed feature.
		18.2	Relate the hydraulic assessment to rescue options.	Risk may limit true rescue options. Throw, reach helo options.
		18.3	Relate the weir assessment to rescue options.	Risk may limit true rescue options. Throw, reach helo options.
		18.4	Identify the role of boats within a weir rescue.	Downstream cover. Transportation of equipment and personnel. Tethered boat rescue options.
		18.5	Understand the limitations and risks of using powered boats around weirs.	Engine failure. Cavitation leading to loss of drive and steerage.
19	Launching and recovery	19.1	Identify considerations when launching and recovering via trailer.	Terrain. Vehicle access, hand roll or rope lower.
		19.2	Identify hand launch considerations, including manual handling.	Move boat as a whole. Move engine, boat and equipment separately.
		19.3	Identify how changing conditions and deployment will affect launching/recovery site choice.	Water levels. Time pressures. Light. Weather.



	Skill sheet element		Learning outcome	Key teaching points
20	Boat handling under power	20.1	Identify the importance of trim when in displacement and planing mode, and use crew in order to apply trim.	Weight shift forward or backward. Balance side to side.
		20.2	Be able to control momentum when travelling forwards and in reverse, identifying how changes in drive and trim affect steerage and pivot of boat.	Appropriate space. Allow for drift.
		20.3	Be able to change direction of the boat at speed in wider areas and low speed in confined areas.	Appropriate space and tiller lock.
		20.4	Manage boat and crew when coming to or leaving shallow areas, buoy/moorings, and other vessels.	Communication from the helm.
		20.5	Explain the terms ground speed and water speed, and why they are important with boat handling.	Using markers on land to check speed over ground.
		20.6	Be able to hold station.	Hold position in the flow. No upstream/downstream or side to side movement. Prevent drift, no accidental movement.
		20.7	Perform a friction lock to hold a boat against an object.	Halving the distance to object with each movement. Angle, trim and revs to hold lock.
		20.8	Apply the use of a variety of angles relative to the current vector when dealing with downstream flow, eddies and flow around obstacles.	Cross flow without unintentional upstream/downstream movement. Predict the effect future water will have on the boat.
		20.9	Perform direct and indirect break-ins, and direct outs, comparing the different methods, and selecting an appropriate technique depending on task.	Water speed, boat speed., Size and depth of eddy.



	Skill sheet element		Learning outcome	Key teaching points
21	Boat handling with paddles	21.1	Identify application for paddle skills.	Self rescue. Access: shallow water/debris.
		21.2	Identify the importance of correct trim and power distribution.	Timing and trim for efficiency.
		21.3	Be able to paddle forwards, backwards and turn.	Time it takes to generate momentum. Awareness of boat spin.
		21.4	Recognise the importance of applying angle before momentum.	Planning for future water.
		21.5	Apply simple command within the boat in order to achieve simple objectives.	One person takes charge, specific paddle commands.
22	Towing	22.1	Perform both line astern and alongside tows.	Advantages/disadvantages, application of each.
		22.2	Identify variables that influence choice between line astern and alongside tows.	Space to manoeuvre. Distance to travel. Water conditions.
		22.3	Identify areas that will require management.	Fuel usage, damage to vessels, tensioned lines and weight distribution.
23	Anchoring/securing	23.1	Identify why anchoring/securing a rescue boat would be required.	Casualty recovery. Downstream containment. Switch to SRT rescue.
		23.2	Recognise types of tethers/anchors depending on area, boat size and design.	Size of anchor and type eg mud.
		23.3	Perform deployment, including measurement of depth and checks to ensure anchor is holding.	Space: allow for swing.
24	Wading with boats	24.1	Explain how a floating platform will aid rescuers within a wading rescue.	Transport of casualties, equipment and welfare supplies.
		24.2	Identify the risks of wading with a boat and steps taken to minimise these.	Entrapment, manholes and drains: wading poles paddles. Cold and HAZMAT: PPE.
		24.3	Perform wading rescues with the aid of a floating platform.	Use of floating platform, with consideration for hazards.
		24.4	Identify the environmental variables and hazards that will directly affect wading with boats.	Water speed, depth, terrain and debris.



	Skill sheet element		Learning outcome	Key teaching points
25	Tethered boats	25.1	Compare the application and limitations of single, 2- and 4-point tethered systems.	Resources/personnel. Bank access/terrain. Hazards precluding engine use.
		25.2	Use appropriate anchors/belay methods for water energy and consequence.	Advantages/disadvantages of hand-held, Italian hitch and I'D belay.
		25.3	Use a tethered boat for transportation and mid-stream access.	Resettable pendulum: people/welfare supplies. Pick off rescue.
26	Night/poor visibility operations	26.1	Identify problems associated with hazard recognition, group control and application of rescue techniques during night/poor visibility operations.	Depth perception. Comms. Line of sight. Awareness of speed over ground. Water depth. Debris.
		26.2	Identify control measures that may be required when operating boats in swiftwater in darkness.	Slower travelling speeds. Personal, scene and boat lighting. Buddy system and roll call.
		26.3	Implement these control measures in order to successfully perform static and mobile rescues.	Spot light casualties. Do not lose sight of casualty.
27	Search operations	27.1	Explain how untethered boats could be incorporated into the search process.	Containment. Primary search. Transport for searchers. Platform for secondary search. Transport for casualty evacuation.
		27.2	Use boats to identify key landmarks that define the search area.	Start and finish of search area. Containment.
		27.3	Construct deployment strategy to perform reconnaissance, a hasty (low coverage) search, and a high coverage search.	Passage plan. Key landmarks - attack points. Additional equipment that may be required for high coverage search.
28	Flips and rights	28.1	Identify steps to minimise the likelihood of a flip occurring.	Angle of boat to flow. Trim. Boat position relative to obstacles.
		28.2	Recall process for dealing with a flipped boat.	Head count. Keep contact with boat. Re-flip, paddle upside down, or abandon boat.
		28.3	Explain options for whether to re-flip and variables that would affect this choice.	Water speed and depth, proximity to downstream hazards.
		28.4	Perform a re-flip and clear up as a team.	How many needed to re-flip boat? People in the water not in the fall-line of flipping boat.
29	Team/personal recovery	29.1	Identify reasoning behind team/self-rescue ability.	Recovery from rescue or malfunction. Reduces task loading on other crew members.
		29.2	Perform team-based rescue (or self-rescue) over sponson whilst in deep water.	Boat set up: handles, safety line, size of sponsons.



	Skill sheet element		Learning outcome	Key teaching points
30	Casualty pick-up and recovery	30.1	Allocate roles for casualty pick-up and recovery.	Rescuer and bowman. Position should not obscure the helm's view.
		30.2	Use environmental factors in order to make a controlled approach.	Approach into the strongest element: wind or flow.
		30.3	Manage the hazard of the engine and the casualty in the water.	Helm must use neutral to protect people in the water. Tiller should be pushed away from the casualty.
		30.4	Recover casualties into boat using forwards- and backwards-facing techniques, and rolling.	Method of recovery should be based in water speed, depth and hazards.
31	Casualty management	31.1	Identify priorities for casualty care.	Breathing, temperature and major trauma.
		31.2	Describe how casualty care would impact on boat handling, length of transit and operation.	Reduced capability of helm and crew. More load will affect engine performance.
		31.3	Identify suitable placement of casualty once aboard and how medical stabilisation would influence this.	Feet up or feet down. Temperature concerns: compression of packaging by wind.
32	Boat-based conditional rescues	32.1	Identify how addition of conditional rescue tools will aid the helm's margin for error.	Use of paddle or throwline to create space between boat and casualty.
		32.2	Identify environmental and casualty variables that will influence the choice of rescue.	Conscious/unconscious. In water hazards, Turbulent water.
		32.3	Perform conditional rescues from a boat, applying control measures in order to reduce risk to personnel and casualty.	Rope management. Engine neutral.
33	Transporting loads	33.1	Identify content of briefing and safety provision for casualties or third parties.	Position in boat. No big movements. Stay low, hold on.
		33.2	Describe how boat stability is affected during loading/unloading of casualties and loads.	Additional load may unsettle boat trim.
		33.3	Describe how boat performance and handling is affected when loaded.	Boats ability to hold station and drive upstream. Tubes lower to the water.
		33.4	Identify the risks involved when securing loads in rescue boats.	Likelihood and consequence of a flip.



	Skill sheet element		Learning outcome	Key teaching points
34	Boat-based stretcher management	34.1	Perform risk assessment of environmental conditions and casualty requirements.	Water speed, hazards. Nature of the casualty's injuries.
		34.2	Identify the different types of stretcher to be used and issues within the boat to be used.	Metal vs plastic. Two piece/single piece. Clean profile/snags.
		34.3	Identify pros and cons/risks of strapping casualty into stretcher/stretcher to boat.	Boat, crew, environment, water energy, nature of casualties injuries.
		34.4	Identify best placement and securing of stretcher within different boat types.	Advantages/disadvantages of on the floor/across the sponsons.
35	Rescues from elevated positions	35.1	Identify different applications for use of ladders from boats.	Welfare checks and evacuation in flooding. Pick off rescues from bridge stanchions/walls. Use in benign environments only. Are other options available, eg foot ladder in water, not in boat?
		35.2	Identify methods of stabilising the boat whilst using ladders from them.	Bolt gun, slings/strops, paddle braced through a window, tied off bow line, another boat.
		35.3	Identify methods of stabilising ladders whilst using them from a boat.	Footed in features of the boat, tied off, footed into another length of ladder.
		35.4	Describe changes that will affect the stability of the ladder and boat.	Water level and speed - ladders should only be used in benign environments. Debris in prop. Engine failure. Weighting the ladder.
		35.5	Demonstrate clear communication between helm and rescuer when ladder is being weighted.	Helm must apply additional revs and ensure boat angle is correct before the ladder is weighted.
36	Boat-based tethered rescues	36.1	Identify hazards associated with deployment of rescue swimmer from a powered boat.	Prop, debris, speed over ground.
		36.2	Identify where and why you would use a tethered swimmer in a rescue, and its correct.	True rescue is required. Helm wants space between boat and casualty in complicated hydrology.
		36.3	Determine safe entry point and identify how water speed and distance will affect timing of tethered swim rescue.	Boat should not be carrying speed over ground. Engine should be in neutral before swimmer deploys.
		36.4	Demonstrate accurate rope management.	Ensure that the swimmer is not impeded.
		36.5	Demonstrate accurate signals and communication within boat between crew members when deploying swimmer.	Confirmation from helm that engine is in neutral.



Swiftwater and Flood Rescue Boat Operator (SFRBO) training site and equipment list

Training site

For rescue boat operations (RBO and FRBO elements), the training site should be a flat or slow-moving water environment. The training site should be such that there is no risk of damage to boat and equipment, or injury to crew, if there is a loss of motor propulsion, eg they would be able to paddle to shore with their emergency paddles easily.

For swiftwater rescue boat operations (SFRBO elements), the training site should be a minimum grade 2 river or marine environment, with suitable hydrology features, for all aspects of swiftwater boat handling and rescue training to be carried out safely and effectively.

Team equipment

The training provider must provide the following for each working group:

- Suitably equipped rescue boat
- All boats must have a prop guard
- Appropriate vehicle, trailer or launching trolley
- Fuel, tools and spare parts for emergency repairs
- First aid, crew welfare and emergency shelter kit
- Whiteboard and marker pens
- Emergency distress kit
- Radio/communication ability
- Appropriate ropes for tethered ropework
- Karabiners
- Pulleys
- Tape slings

Personal equipment

The students must bring (if not provided by the training provider)

- Drysuit or suitable waterproof protective clothing
- PFD
- Thermal undersuit
- Protective footwear
- Throwline and suitable quick release belt
- Marine water safety helmet - PAS 028:20021
- Gloves
- Eye protection
- Knife
- Waterproof notepad

1 Whilst there is no established inland powerboat helmet standard, the marine safety helmet standard PAS 028:2002 is the most appropriate for inland powerboat use.





Coastal Module (CM)

Course overview and target audience

This is designed for inland boat operators who may operate near or travel along tidal rivers and estuaries (eg category C and D in the UK), in daytime and fair weather conditions, who need an understanding of the unique regulations. It is not designed as a coastal rescue course or for use in non-categorised waters.

The learning outcomes below are specifically for the additional elements taught within the coastal module. These are in addition to the learning outcomes already covered in the prerequisite courses of RBO, FRBO or SFRBO.

Contact hours 6 hours (1 day)	Prerequisites Rescue 3 RBO, FRBO or SFRBO
Qualification valid for 3 years	Accredited by Rescue 3 Europe

Taught by

- Coastal Module Instructor (CMI)



Coastal Module (CM) skill sheet contents

Theory
1. Weather forecasts
2. Regulations and buoyage
3. Tidal awareness
4. Night and poor visibility considerations
5. Emergency procedures
Practical
6. Securing to a buoy
7. Coming alongside other boats/jetties/pontoons
8. Anchoring/securing
9. Navigation and passage planning



Coastal Module (CM) learning outcomes and key teaching points

	Skill sheet element		Learning outcome	Key teaching points
1	Weather forecasts	1.1	Identify methods of collecting weather information.	National weather forecasts, websites, weather apps, shipping forecasts.
		1.2	Apply weather information to category C and D tidal river and estuary boat operations, and consider how it might affect smaller craft.	Beaufort scale, weather information, wind against tide, wind direction, visibility.
2	Regulations and buoyage	2.1	Recall national categorisation of water.	Eg in the UK, MCA categories of water: Category A: Narrow rivers and canals where the depth of water is generally less than 1.5 metres. Category B: Wider rivers and canals where the depth of water is generally 1.5 metres or more and where the significant wave height could not be expected to exceed 0.6 metres at any time. Category C: Tidal rivers and estuaries and large, deep lakes and lochs where the significant wave height could not be expected to exceed 1.2 metres at any time. Category D: Tidal rivers and estuaries where the significant wave height could not be expected to exceed 2.0 metres at any time.
		2.2	Apply rules of the road to safely operate powerboats under a variety of lighting conditions.	Rules of the road as laid out in International Regulations for preventing Collisions at Sea (IRPCS).
		2.3	Identify buoyage and orientation as used for navigation of category C and D tidal rivers and estuaries.	Buoyage as laid out in International Association of Marine Aids to Navigation and Lighthouse Authorities (IALA).
		2.4	Identify navigational aids and hazards from a chart.	Recognition of features on a marine chart.
3	Tidal awareness	3.1	Understand the effects of tides, and how they can affect the operational environment.	Use of tide tables. Water depth, wave height, anchoring considerations. Effect on passage plan.
4	Night and poor visibility considerations	4.1	Identify appropriate lighting for operating boats in water at night/in poor visibility category C and D tidal rivers and estuaries.	Personal, scene and boat lighting. Lighting regulations for size of boat.
		4.2	Identify hazards and control measures when operating boats in category C and D tidal rivers and estuaries at night/in poor visibility.	Depth perception, communication, line of sight, awareness of speed over ground, water depth, debris. Control measures: lighting, speed, communication.

CM



	Skill sheet element		Learning outcome	Key teaching points
5	Emergency procedures	5.1	Explain how to use VHF distress messages.	Marine VHF distress messages. Channel 16. Including mayday, mayday relay, pan-pan, sécurité.
		5.2	Identify other methods of declaring distress.	Flares, light signals, mobile phones, audible signals eg whistle.
		5.3	Identify common ways in which a vessel may be damaged in category C and D tidal rivers and estuaries, and actions to be taken.	Running aground, collision (eg with rocks, buoys, or other vessels). Lack of drive/engine failure. Hull/engine repair kit.
		5.4	Identify hazards to boat and crew, and control measures, when working with helicopters.	Noise, downwash.
6	Securing to a Buoy	6.1	Demonstrate securing boat to a buoy.	Direction of approach, boat hook, communication with crew members, securing to buoy with round turn and two half hitches, departing from buoy.
7	Coming alongside other boats/jetties/pontoons	7.1	Demonstrate techniques for coming alongside and leaving other boats.	Direction of approach, use of fenders, approach around 15 degrees of angle to the moored boat, securing to other boat, including stern breast rope.
		7.2	Demonstrate techniques for coming alongside and leaving jetties and pontoons.	Direction of approach, wind direction, tide direction, speed of approach, securing to jetty/pontoon, figure of eight lashing bowline or clove hitch, use of fenders, consideration for other nearby boats.
8	Anchoring/securing	8.1	Recognise types of tethers/anchors depending on area, boat size and design.	Size of anchor and type eg mud.
		8.2	Perform deployment, including measurement of depth and checks to ensure anchor is holding.	Space: allow for swing.



	Skill sheet element		Learning outcome	Key teaching points
9	Navigation and passage planning	9.1	Apply International Regulations for the Prevention of Collisions at sea (IRPCS) in order to safely operate powerboats under a variety of light conditions.	Head on situation: pass port to port (steer right). Give way to the right. Power gives way to unpowered craft.
		9.2	Orient map to ground and identify how water level changes will affect information represented on map/chart.	Loss or gain of access with changes of water level.
		9.3	Using an appropriate information source, identify tick features that will be seen en route.	Passage plan, Return to last point if visibility or comms are lost.
		9.4	Using a map/chart, confirm what at an objective.	Three reasons that confirm your position.
		9.5	Understand use of GPS and sat nav units.	Use of GPS and sat nav units in category C and D tidal rivers and estuaries.
		9.6	Use stop/catch features when planning a route.	Large features that identify the end of a search or working area.







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