



Level 5: Advanced Swiftwater Rescue

(Sample Skills Course)

Course Overview: The **Advanced Swiftwater Rescue** workshop is aimed at trip leaders, boaters paddling on more challenging whitewater, and anyone desiring opportunities to develop their rescue skills. Critical judgment and rescue awareness, impacting both personal and group safety, are emphasized throughout the course. Although new skills may be taught, this class focuses on developing judgment and applying skills in rescue scenarios. Scope and content of the course will vary, based upon participant needs, interests and experience.

Course Objectives:

- Reinforce basic rescue skills, including swimming/self-rescue, throw ropes, and boat based rescue
- Practice skills during multiple scenarios
- Refine and extend critical judgment through multiple scenarios
- Develop and practice more advanced rope-based and in-water skills

Essential Eligibility Criteria (EEC):

ACA courses are open to all individuals who acknowledge the ability to perform the following essential eligibility criteria.

1. Breathe independently (i.e., not require medical devices to sustain breathing)
2. Independently maintain sealed airway passages while under water
3. Independently hold head upright without neck / head support
4. Manage personal care independently or with assistance of a companion
5. Manage personal mobility independently or with a reasonable amount of assistance
6. Follow instructions and effectively communicate independently or with assistance of a companion
7. Independently turn from face-down to face-up and remain floating face up while wearing a properly fitted life jacket*
8. Get on /off or in / out of a paddlecraft independently or with a reasonable amount of assistance*
9. Independently get out and from under a capsized paddlecraft*
10. Remount or reenter the paddlecraft following deep water capsize independently or with a reasonable amount of assistance*
11. Maintain a safe body position while attempting skills, activities and rescues listed in the appropriate Course Outline, and have the ability to recognize and identify to others when such efforts would be unsafe given your personal situation*

** To participate in adaptive programs, participants must acknowledge only the first six EEC listed above. Entry-level adaptive programs will involve teaching and practicing EEC #7-11.*



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Course Prerequisites:

Participants should have completed an ACA (or equivalent) Swiftwater Rescue workshop within the past three years. Participants should be in good health and overall fitness, possess solid swimming ability, and be comfortable swimming in moving current during river drills.

Minimum personal equipment for class: PFD for whitewater use (rescue PFD strongly recommended), whitewater helmet, protective clothing suitable for extended swimming in cold water, protective footwear, whistle and throw rope. Additional equipment may be used, depending on the participant's background and specific course content

Course Duration: One or more days (8+ hours)

Course Location / Venue: A chute of water with deep, clean wave action, well-defined eddy lines and no immediate hazards or risks below. Ideally, the site should contain class II rapids, although it may be taught on less difficult rapids. Protected space is needed for on-land work, with adequate shelter for inclement weather. Sites should be chosen to address participant needs.

Class Ratio: 12 Students : 1 Instructor; with an additional instructor the ratio can be 24 : 2

The following is a general summary of course content for the Level 5: **Advanced Swiftwater Rescue** course. Safety and Rescue Instructors should use this document as a general guide for conducting programs. All of the topics listed below do not need to be covered in a particular class. Depending on the program, specific content points might be studied and practiced in depth, briefly reviewed, or skipped entirely. As new equipment and techniques are developed, the ASWR instructor may introduce them to students, so long as the general principles taught by the ACA SWR program are maintained. Specific program content should be adjusted as necessary to accommodate student skills, goals and experience, as well as weather and water conditions during the program.



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Introduction, Expectations, & Logistics:

- Welcome, introductions, paperwork
- Student & instructor course expectations and limitations
- Course itinerary & site logistics
- Review waiver, assumption of risk, challenge by choice, medical disclosure
- About the ACA
- PFD policy (always wear on water)
- Appropriate personal behavior
- No alcohol / substance abuse
- Proper etiquette on & off the water
- Respect private property
- Practice Leave No Trace ethics

The Paddling Environment:

- Wind
- Waves
- Weather
- Water

Personal Preparation:

- Personal ability
- Swimming ability
- Water comfort & confidence
- Fitness, conditioning, and warm up
- Safe paddle and boat handling
- Safety and rescue considerations
- Personal equipment (reviewed by Instructor)

Rescue Philosophy

- Rescue priorities and proactive accident prevention

Throw ropes

- Practice rope throwing and belaying
- Line ferry techniques
- Line capture devices e.g., “Reach system” and “Snag plate”

In-water techniques

- Advanced wading techniques – tethered wades e.g., 2 person, line astern and wedge. Advanced swimming

and boat-based rescue as applicable to course needs

- o In-water techniques in more challenging situations
- o Boat handling skills

Knots

- Components of a good knot
 - o Recognizable form, strong, easy to tie and untie, minimal rope use, minimal loss of rope strength, common use
- Terminology
 - o Standing and running ends, bights, overhand and underhand loops
- Key actions
 - o Set, dressed, backed up
- Figure eight family
 - o Strong, easily tied and recognized, fundamental rescue knots
 - o Water knot, Figure 8 stopper, figure 8 on a bight, figure 8 follow-through (as both a loop and Flemish bend), double fisherman for prusik application, prusick knot.
 - o Additional useful knots (optional) butterfly knot, clove hitch, two half hitches, munter hitch, in line 8, double eye 8, radium release hitch, mariner’s hitch
- Knot mastery comes from practice; plan on tying knots with cold hands, under water
- www.animatedknots.com

V-lowers

- Slower, higher risk, more complex
- Requires two belay teams, rescue vest, rescue swimmer, downstream safety,
- Locking carabiner and at least two throw ropes



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- Allows direct maneuvering to rescue location
- Hand signals and safety plan
 - One hand waving in air means “help me”
 - Point with one or two hands for directional changes
 - Point hands down stream for “lower” and upstream for “bring me back upstream”. Upstream hauls are challenging on the rope handlers and tethered swimmers.
- Arching back to plane to surface
- Hands behind head to help create an air pocket
- Single rope technique for direct lower
- Higher water volumes and deeper water can overwhelm the rescuer
- Very effective as a wading assist
- Provides strong support for rescuer forced to work upstream of significant hazards

Anchors and Mechanical Advantage

- Review basic principles and techniques
- Advanced knots and their uses in anchor and MA systems – double eye eight, in line eight, in line eight follow through and Munter hitch
- Load releasing hitches – Mariner’s knot, Double Munter hitch and Radium release hitch
- Introduce “wrap-pull” anchors
- Introduce 3,4+ point anchors
- Anchors in difficult environments i.e. underwater chocks, direction changes and climbing hardware (e.g., “friends”)
- Piggyback rigs –standard set up and simple tensionless wrap method
- Introduce new MA systems (2:1, 4:1, 6:1 9:1 and higher degrees of MA) emphasizing friction loss reduction
- Vector application greatly increases when applied to each system.

Rope Techniques

- Review stabilization lines and snag lines and simple cinches
- Introduce and develop cinching techniques
- Cinches can be complex and time consuming; upstream spotters are essential
- Uses include equipment recovery, body recovery and entrapments; ***improperly applied cinches have the potential to cause fatal injuries; be sure to cinch the torso and not the neck***
 - Ideally, cinches are as simple as feasible, releasable after application
 - Simple cinches, (open and closed), J-cinches, Kiwi cinches using tethered rescuer and line capture devices and modified closing loop cinches

Pins and Entrapments

- Apply rope techniques to pinned craft and entrapped victims
- Hard boat and inflatable boat differences and options
- Determine ideal angle of pull (IAP) based on anchor point locations and initial boat pivot
- Multiple attachment systems and roll over concepts (e.g., Steve Thomas rope trick)
- Multiple haul lines – haul line, roll over line and recovery line
- Practice broach, flat and vertical pin escapes
- Commercial line capture devices used to snag pinned boats and retrieve rope in the river

Line Crossing and other river crossing techniques

- Zip lines / tensioned diagonals
- Angled, direct hand over hand short line crossing
- Wedges to assist victims
- Boat pendulums and tag lines on boats
- Discussion of vertical rescue (e.g., Tyrolean)



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- Discussion and dry land practice of short haul techniques

Boat Based Rescue

- Recovering swimmers and gear in more challenging water
- Use of various river craft such as rafts, kayaks, inflatables, canoes, SUP, prone paddle boards and river boards.
- Boats as rescue platforms (e.g., 2 and 4 point tethered boat, Telfer lowers)
- Inflatable based tethered rescuer teams

Tethered and Non-Tethered Swimming Rescues

- Consider use as final downstream safety
- Review victim psychology
- Fast, simple, higher risk
- Unconscious victims
- Aggressive victims
- Technique limitations
- Use of Rescue Tether

Scene Management

- Locate the victim, assess scene safety and best access to victim. Stabilize and transport the victim as needed.
- Prioritizing the rescue
- Most rescues performed quickly, without a formal structure “Self-Directed Rescue”
- Larger groups and longer rescues often need more structure
- Incident Command structure
 - Leader
 - Safety
 - Rescuer
 - Additional roles – medic, rigger, runner, ...
- Complete the rescue without compounding the situation
- Develop back up plans
- Communication (AW signals)
 - Hand and whistle signals
 - Cell phone, radio, satellite comms and other techniques as appropriate
- Interaction with outside rescuers and First Responders

Conclusion & Wrap Up:

- Group debrief / Individual feedback
- Course limitations
- Importance of First Aid & CPR
- Importance of additional instruction, practice, experience
- Importance of appropriate level of safety & rescue training
- Demo advanced maneuver
- Life sport / Paddling options
- Local paddling groups / Clubs
- Handouts / Reference materials
- ACA Membership forms
- Course evaluation
- Participation cards

Resources

- Whitewater Rescue Manual (Walbridge and Sundmacher)
- Swiftwater Rescue (Ray)
- River Rescue (Bechdel and Ray)
- Heads Up! (video)
- Whitewater Self Defense (video - Ford, Walbridge and DeCuir)
- River Safety Reports (Walbridge)
- Whitewater Safety and Rescue (Ferrero)
- Kayaker's Toolbox (video – Holt and Dickert)
- High Angle Rescue Techniques (Vines and Hudson)
- NOLS River Rescue Guide (Ostis)
www.animatedknots.com
- www.cmcrecue.com
- <http://www.americancanoe.org/?page=R3>
- rescueforriverrunners.com