

# TR: Water Rescue

## Lesson One

### Rescue Techniques

**DOMAIN:** COGNITIVE / PSYCHOMOTOR

**LEVEL OF LEARNING:** COMPREHENSION / APPLICATION

#### **MATERIALS**

IFSTA Fire Service Search and Rescue Manual 7<sup>th</sup> Edition; NFPA 1006 Technical Rescuer Professional Qualifications; NFPA 1670 Operations and Training For Technical Rescue Incidents; NC Wildlife Commission Boating Guide, Boat North Carolina; Water Rescue, Basic Skills for Emergency Responders, Mosby Lifeline; LCD projector and computer; overhead projector; white board; dry-erase pens; handouts of OHTs; VCR and monitor; Water Rescue Video, Swept Away, Alan Madison Productions; Water Rescue throw bags (50 to 75 ft. of line), 50 to 75 foot long lengths of water rescue rope; 1 life ring or buoy; 1 pike pole; 1 broom; 1 shovel; Type I, II, III, IV and V PFDs for demonstration. A Type III or V PFD is necessary for each candidate and instructor. The instructor may also provide any additional props that you may have access to that are specific to the surface water environment your students will be exposed to.

#### **NFPA 1006, 2013 Edition JPRs**

- 11.1.6 Deploy a water rescue reach device to a waterbound victim
- 11.1.7 Deploy water rescue rope to a water-bound victim
- 11.1.12 Demonstrate fundamental watermanship skills
- 11.1.13 Escape from a simulated life-threatening situation
- 11.2.1 Swim a designated water course
- 12.1.4 Perform a nonentry rescue in the swiftwater/flooding environment
- 12.2.1 Perform an entry rescue in the swiftwater/flooding environment

**Junior Member Statement:**

Junior Member training activities should be supervised by qualified instructors to assure that the cognitive and psychomotor skills are completed in a safe and non-evasive manner. While it is critical that instructors be constantly aware of the capabilities of all students both mentally and physically to complete certain tasks safely and successfully, the instructor should take every opportunity to discuss with departmental leaders and students the maturity and job awareness each participant has for the hazards associated with fire and rescue training.

**TERMINAL OBJECTIVE**

The Technical Rescuer candidate given the appropriate equipment shall correctly demonstrate the proper basic rescuer PPE donning and doffing procedures, basic rescuer equipment needs, as well as basic surface/swift water victim rescue techniques, and proper in-water self-survival and rescue situations.

**ENABLING OBJECTIVES**

1. The Technical Rescuer candidate given the appropriate equipment shall correctly demonstrate basic shore-based rescue techniques to include Talk, Reach, and Throw.
2. The Technical Rescuer candidate, given the appropriate PPE and other swimming aids, shall demonstrate the correct donning and use of their PPE, and any other swimming aids necessary to safely enter and swim a designated water course.
3. The Technical Rescuer candidate, given the appropriate equipment and PPE, shall correctly explain and demonstrate the posturing techniques for rescuers and victims that help retain body heat and slow down the onset of hypothermia.
4. The Technical Rescuer candidate, given the appropriate equipment and PPE, shall correctly explain the purpose of and demonstrate the defensive swimming posture, the offensive swimming posture, and ferry angle-crossing posture.

5. The Technical Rescuer candidate given the appropriate equipment shall correctly demonstrate basic in-water hand and sound signals for both day and night communications.
6. The Technical Rescuer candidate given the appropriate equipment shall correctly demonstrate the techniques used to free a water bound victim suffering a limb entrapment.

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## Lesson One

### Rescue Techniques

#### MOTIVATION

Every year rescuers with good intentions respond to surface water rescue accidents with the expressed purpose of saving a life. All too often rescuers become victims and sometimes statistics as a result of poor preparation or very little rescue skills knowledge of surface water environments. This lesson addresses the use of skills that may help keep the rescuer out of the surface water environment. By using these skills properly a surface water rescue may be successfully performed without the rescuer being placed in a hazardous environment. Remember the most important aspect of any surface water rescue operation: SAFETY OF THE RESCUER. If safety is not a top priority - RESCUERS WILL DIE.

#### PRESENTATION

#### ENABLING OBJECTIVE #1

The Technical Rescuer candidate when given appropriate equipment shall correctly demonstrate basic shore-based rescue techniques to include Talk, Reach, and Throw.

1. Discuss the techniques for communicating (TALK) to a conscious patient for affecting a victim self-rescue.
  - a) Make verbal contact with patient.
  - b) Determine if patient is injured.
  - c) Have patient roll on his/her back. The defensive swimming position for swift water.
  - d) Point feet downstream. Feet higher than buttocks.
  - e) Have patient position him/herself in a ferry angle that will angle the patient to the rescuers shore.
  - f) Advise patient not to stand in the current.
  - g) Have rescuers follow the patient to assist him/her at the take out point.

**NOTE: This procedure works best for moving water conditions and should also be used by rescuers who find themselves in the water.**

2. Demonstrate the reaching techniques for shore-based rescue. Include examples of items that can be used to affect a reach.
  - a) Pike poles.
  - b) Brooms.
  - c) Ladders.
  - d) Inflated fire hose.
  - e) Shovel.
  - f) Tree limbs.
  - g) Aerial devices.

**NOTE: The pressure ranges for inflating fire hoses range from 30 to 45 psi in some references to 100 to 120 psi in others. The pressures used should be based on the type of hose and its condition. It is recommended that only fire hose that has passed a current pressure test be used for this evolution.**

3. Demonstrate the throwing techniques for shore based rescue.
  - a) Rescue throw bag deployment and retrieval.
  - b) Rescue rope deployment and retrieval.
  - c) Flotation aids with and without lines.

Reference: IFSTA Fire Service Search and Rescue Manual 7<sup>th</sup> Edition page 333.

Water Rescue, Chapter 6, pages 113-114.

Swift Water Rescue by Slim Ray pages 143-144

4. Emphasize always throw for the line to cross at the victim's chest; but if it doesn't, so that it will fall upstream of the victim. This will allow the current to carry the line or object to the victim instead of away from them as will happen if it falls on the downstream side. For moving water applications, instruct the victim to place the rope over the shoulder that is opposite the bank they are being belayed to, and to position their body at the correct ferry angle. The rescuer should hold the working side of the rope in their downstream hand.
5. Point out that whenever possible, shore-based rescue techniques should be exhausted before an in-water

contact rescue is attempted to reduce the risk to rescuers.

## **APPLICATION**

The following skills are designed to provide practice for the Technical Rescuer candidate. After the instructor locates a safe area in which to train and the instructor(s) and students have all the necessary PPE for protection, these skills should be practiced until the necessary skill levels are attained. The instructor shall divide the candidates into small groups and let them practice reaching and throwing techniques in a surface water environment that is appropriate to their response area.

### **SKILL - Self Rescue**

Self-Rescue - Talk to the victim and have them assume the correct position in the water. Tell them what you want them to do as they move downstream.

### **SKILL - Reaching Rescue**

Reaching Rescue- Talk to the victim and advise them of what you want them to do. Correctly extend the object to them and pull them to safety.

### **SKILL - Throwing Rescue**

Throwing Rescue - Advise the victim on how to hold the rope over their shoulder and what you want them to do during the swing to shore.

## **PRESENTATION**

### **ENABLING OBJECTIVE #2**

The Technical Rescuer candidate, given the appropriate PPE and other swimming aids, shall demonstrate the correct donning and use of their PPE, and any other swimming aids necessary to safely enter and swim a designated water course.

1. Discuss the correct choice of PPE and swim aids to be used for the designated watercourse.
  - a) Type of PFD and swim aids.
  - b) Type of PPE for environmental conditions.

2. Discuss the techniques used for safely entering a shallow water environment.
  - a) Step-in.
  - b) Shallow water dive consists of three different methods including front, side and back.
3. Demonstrate the following methods of crossing shallow water/wading rescues.
  - a) One person wading.
  - b) Two person wading.
  - c) Wedge.
  - d) People pivot.
  - e) Line rescue.
4. Swim a designated watercourse in accordance with established guidelines.
  - a) American Red Cross and the YMCA both have acceptable standards (see additional information folder).

Reference: American Red Cross, Basic Water Safety, Chapter 2, pages 36-54.  
Water Rescue, Chapter 6.  
Swift Water Rescue by Slim Ray pages, 103-105.

## **PRESENTATION**

### **ENABLING OBJECTIVE #3**

The Technical Rescuer candidate, given the appropriate equipment and PPE, shall correctly explain and demonstrate the posturing techniques for rescuers and victims that help retain body heat and slow down the onset of hypothermia.

1. Define hypothermia. Why is it dangerous when working in the surface water environment?
2. Point out the signs and symptoms of hypothermia.
  - a) Shivering.
  - b) Reduced body temperature.
  - c) Cold, pale skin.
  - d) Dilated pupils.
3. List the priorities necessary to reduce victim hypothermia.
  - a) Keep or get the victim dry.
  - b) Maintain or recover core body temperature.

- c) Monitor carefully.
4. Discuss the principle behind the Heat Escape Lessening Posture (HELP).
    - a) The HELP posture was developed by a Canadian physician named Dr. John Hayward.
    - b) It was designed for one person and follows the “fetal tuck” principle.
  5. Demonstrate the following steps for implementing the HELP posture.
    - a) The victim assumes a “floating on the back” posture.
    - b) The victim crosses their legs and pulls the knees up into the abdominal area.
    - c) The victim crosses their arms over their chest and presses upper arms against the rib cage.
    - d) The hands are placed around the throat to protect the carotid artery, thus keeping the hands out of the water.
    - e) The victim should be wearing a PFD for HELP to have optimum effect but can be performed without a PFD.
    - f) The victim should keep their neck rolled forward with their chin tucked into their chest.
  6. Discuss the principle behind the HUDDLE posture.
    - a) It was designed for two or more people.
    - b) Reduces heat loss.
    - c) Aids rescuers in spotting victims.
    - d) Boosts victims’ morale.
  7. Demonstrate the following steps for implementing the HUDDLE posture.
    - a) The victims wrap their arms around each other’s waist.
    - b) The victims wrap their legs together.
    - c) The victims may elect to place their hands inside each other’s clothing.

**NOTE: HELP and HUDDLE are best suited for open water environments, not moving or swift water environments.**

Reference: Water Rescue, Chapter 7, pages 142-145.  
American Red Cross, Basic Water Safety, page 61.



## PRESENTATION

### ENABLING OBJECTIVE #4

The Technical Rescuer candidate given the appropriate equipment shall correctly explain the purpose of and demonstrate the defensive swimming posture, the offensive swimming posture, and the ferry angle-crossing posture.

1. Illustrate the steps for implementing the defensive swimming posture.
  - a) The swimmer should roll onto their back and point their feet downstream.
  - b) The heels of the feet should be slightly higher than the buttocks.
  - c) As the swimmer contacts an obstacle, the swimmer should flatten out their body so as to slide over the obstacle or use their feet to fend off the obstacle and then resume the correct posture to continue downstream.
  - d) Encourage the students not to attempt to stand-up in fast moving water as they may lose their balance and be pushed over and trapped under water.
  - e) Emphasize to the students that breathing when in this position must be done in the troughs between the waves in rapids.
  - f) Students should complete a defensive swim of at least 100 yards.
  
2. Point out the conditions for which an offensive swimming posture would be beneficial:
  - a) Entering or leaving eddies.
  - b) Moving across extremely fast, deep water.
  - c) Chasing a patient downstream of a swimming rescuer.
  - d) Approaching a strainer.
  - e) Swimming a line across a river.
  
3. List the steps for implementing an offensive swimming posture.
  - a) Swimmer rolls onto their stomach with head pointing upstream or downstream, depending on their objective.

- b) If heading upstream, swimmer should position their body at a 45-degree angle to the current vector - establishing a ferry angle.
  - c) Using a freestyle stroke, the swimmer swims hard toward their destination such as a patient, island, rock, or shoreline.
4. Point out the potential hazards associated with the offensive swimming posture:
- a) The swimmer forgets to kick.
  - b) Hard impacts against obstacles may cause mild to severe bruising.
  - c) Head and facial injuries may occur.
  - d) Severe impacts may result in joint dislocation.

**NOTE: Short bladed fins are very helpful to rescuers. Many rescuers wear elbow, shin and kneepads and/or purchase wet suits with built-in protection.**

5. Define ferry angling.
- a) It is a 45-degree angle to the current vector with the swimmers head pointed toward their objective, not a 45-degree angle to the shoreline.
  - b) Use backstrokes if swimmer is on their back.
  - c) Use freestyle strokes if swimmer is on their stomach.
  - d) It is an excellent technique for reaching the shore in a swift water environment.
6. Go over the correct methodology for safely entering and exiting an eddy, and review why an eddy can be used to the rescuer's or victim's advantage.

Reference: Delmar Water Rescue Levels I and II, pages 140-141  
Swift Water Rescue by Slim Ray pages, 32-33

## **PRESENTATION**

### **ENABLING OBJECTIVE #5**

The Technical Rescuer candidate when given the appropriate equipment shall correctly demonstrate basic in-water hand and sound signals for both day and night communications.

1. Demonstrate the proper use of the basic in-water hand signals for communicating.
  - a) Stop.
  - b) Help/Emergency.
  - c) All clear.
  - d) OK.
  - e) River left.
  - f) River right.
2. Demonstrate the proper whistle signals used for in-water communications.
  - a) Stop or Attention – 1 long blast.
  - b) Emergency – 3 long blasts.
  - c) Upstream – 2 short blasts.
  - d) Downstream – 3 short blasts.
3. Discuss what is needed for hand signal communication at night.
4. Discuss the different type of communication devices that can be used in a rescue situation.
  - a) Mirrors (both day and night operations).
  - b) Bullhorns.
  - c) Panel markers.
5. Point out that at night with the use of lighting, some of the signals are different.
  - a) Move in for pick-up.

Reference: Water Rescue, Chapter 6.  
Swift Water Rescue by Slim Ray, page 182.  
Delmar Water Rescue Levels I and II, pages 57 and 58.

## **PRESENTATION**

### **ENABLING OBJECTIVE #6**

The Technical Rescuer candidate when given the appropriate equipment shall correctly demonstrate the techniques used to free a water bound victim suffering a limb entrapment.

1. Discuss the variation on the floating tag line known as the snag tag or weighted line.

2. Point out that the bare line is easier to handle than the snag tag or weighted line.
3. Discuss how the bare line can also be used for cinching rescues.

Reference: Swift Water Rescue by Slim Ray, pages 112-113 & 162-163.  
Delmar Water Rescue Levels I and II, pages 159-160.

## **APPLICATION**

The following skills are beneficial for the Technical Rescuer candidate to practice; providing the instructor can locate a safe area to train in and the instructor(s) and students have the necessary PPE for protection. The instructor shall choose the skill that is most appropriate for the type of water environment that is in the immediate response area.

**SKILL** - Still water environments (lakes, swimming pools, ponds, slow moving rivers).

1. Have each candidate wearing the appropriate PPE practice getting into the HELP posture.
2. Have candidates break up into small groups and practice getting into a HUDDLE.

**NOTE: Have several candidates serve as rescuers with throwing devices at the ready. Keep candidates near enough to shore or boat (if one is being used) that throwing devices can easily be thrown in the event of an emergency. All personnel working in boats or within 10 feet of the shoreline should wear appropriate PPE.**

**SKILL** - Swift water environment (fast moving water).

1. Locate an eddy on the river, have each candidate launch from the upstream side of the eddy and work their way towards the eddy.
  - a) Have each candidate, wearing the appropriate PPE, practice getting into a defensive swimming posture.
  - b) Have each candidate, wearing the appropriate PPE, practice getting into an offensive swimming posture.

- c) Have each candidate, wearing the appropriate PPE, practice swimming to a designated point using a ferry angle.

**SKILL – Shore-Based Rescue Systems**

Have candidates demonstrate the procedures in Enabling Objective # 3.

**NOTE: All Technical Rescuer candidates shall be in full PPE when working within 10 feet of the water. (Swift Water Rescue by Slim Ray page 182)**

**NOTE: Have several candidates serve as rescuers with throwing devices at the ready downstream of the eddy. Instructor may want to establish a tensioned ferry line downstream of the designated take out point.**

**NOTE: A minimum of three experienced water rescue instructors should be present during all skill sessions conducted in the water.**

**SUMMARY**

This lesson plan is designed to make the Technical Rescuer candidate aware of the proper use of PFDs (Personal Flotation Devices), and how to perform the rescue techniques that are safest for them while still staying on the shoreline or dock. As with any skills these must be practiced to remain proficient. These techniques will not always be the method of choice but if they will work FOR YOUR SAFETY USE THEM.