

Norfolk Volunteer Fire Department

Cold Water Rescue Emergencies



2010
Training

Cold Water Rescue overview:

This Cold Water Rescue class is intended to provide rescuers the necessary training to perform and assist in a Cold Water Rescue.

Provide the tools for all to recognize true rescue events as well as safety to all responders while providing the most appropriate services possible.



Cold Water Rescue Scope:

During the past several years, there has been an increase in the number of water rescue incidents in the United States. Water rescue incidents generally occur because victims either knowingly enter the water, or otherwise find themselves in the water and unable to remove themselves from the dangers associated with that body of water.

There is always the possibility of more victims becoming involved because of the good intentions of caring citizens, and/or untrained rescue personnel trying to help.



Cold Water Rescue Purpose:

Cold Water Rescue operations present a significant danger to fire department personnel. The safe and effective management of these types of operations requires basic to very specialized considerations.

It shall be the intent of the department not allow fire department personnel to participate in water rescue activity without the use of proper safety equipment or training.



Cold Water Rescue and Command:

After assuming Command, Command must secure the immediate area and assure that no more citizens enter the water.

Command must identify the problem and make a decision whether to operate in the rescue or recovery mode.

Command needs to consider the risk vs. benefit factor.



Cold Water Rescue and Safety

Risk vs. Benefit Factor:

This needs to be decided ASAP.

If the benefit is high, and the risk to rescuers is low, Command should move forward with the action plan as long as there are sufficient resources of trained personnel.

If the risk is high to rescuers and the benefit is low, Command should discuss with first responders and develop an action plan to make a recovery or make the call for further resources.



Water Temperature:

The Body cannot maintain temperature in water <92 deg.

Heat Loss occurs 25X Faster than in air.

Immersion can lead to Hypothermia.

Hypothermia can lead to:

- Inability to Self-Rescue
- Inability to follow simple directions
- Inability to grasp line, Flotation Device
- Sudden Immersion, Drowning



Water Temperature:

A person suddenly immersed in cold water, especially that colder than 50 F, even if unhurt, immediately begins to suffer life threatening problems.

WATER TEMP.

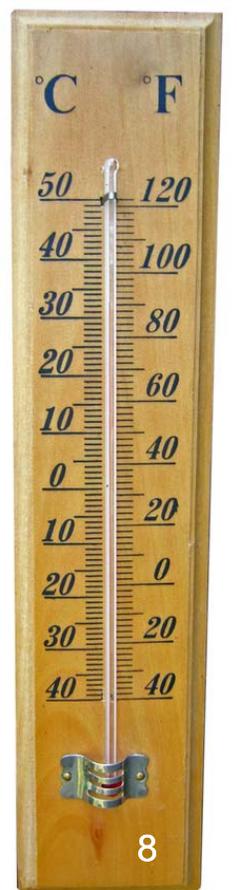
32.5 F
40 F
50 F
60 F
70 F

USEFUL WORK

Less than 5 mins
7.5 mins
15 mins
30 mins
45 mins

UNCONSCIOUS

Less than 15 mins
30 mins
60 mins
2 hours
3 hours



The mammalian diving reflex causes a bradycardia response (lowered heart rate), and it restricts peripheral blood flow while preserving it for the brain and vital organs.

Successful resuscitation has been achieved on individuals that have been submerged for more than 1 hour in cold water

REMEMBER

You're Not Dead until
you are Warm and Dead!



Hazard Identification

These hazards are not just for the victims but the rescuers as well. As these hazards can affect how the rescue will be managed.

Drowning:

Obvious to many but that's what we are trying to prevent.

Entrapment:

What can get victims/rescuers stuck

Trauma:

What can hurt victims/rescuers



Hypothermia:

Most water in our local area would be considered cold enough (< 70 deg.) year around to cause Hypothermia

Debris:

Top, floating, suspended and bottom

Fixed Obstacles:

Bridge abutments, Rocks, Culverts and others

Strainers:

Strainers let water pass but not solids to pass through

Examples: Barb wire, tree limbs, branches, log jams and fences



Forces of Moving Water:

<u>Current (M.P.H.)</u>	<u>Force on Legs</u>	<u>Force on Body</u>
3Mph	16.80	33.60
6Mph	67.20	134.00
9Mph	151.00	302.00
12Mph	269.00	538.00



Strategy and Tactics (Simple to Complex)

Reach:

- This can be done with any long rigid object. Such as a pike pole or hook. But you can use your imagination.
(Low risk) Awareness Level

Throw:

- Using a throw bag of rope or floatation device.
(Low risk) Awareness Level

Row:

- Using a boat or vessel for victim contact. Should have trained personnel perform this task
(Medium/Moderate risk) Tech Level

Go:

Swimmers need to be trained for victim contact/self rescue.
(High risk) Tech Level



ALWAYS WEAR YOUR PFD!!!

Required Equipment

Minimal Equipment Required (PPE):

At a minimum a U.S. Coast Guard approved Class III PFD (Personal Flotation Device) for anyone within 10' of the water or handling rescue rope lines.



Cold Water Rescue Suits

Location of Victims

Use of Spotters



Location Of Victims

Spotters need to remain in place until released by command.

Moving currents and ice can be deceiving of the victims last known whereabouts.



Hand Signals

Proper Use of Hand signals must be established:

- Between rescuer and rope tender
- Between rescuer and spotters
- Left
- Right
- Keep Going
- Stop
- Haul



Rescue Vs. Recovery

Factors that need to be considered:

- Time Submerged
- Age
- Known or suspected trauma
- Water Temperature
- Estimated time for Rescue/Removal



In-Water Patient Immobilization

Always assume a cervical injury in a drowning victim until proven otherwise!

- Maintain Airway and Manual C-Spine during extrication from water.
- Submerge board under patient.
- Secure patient with straps.



Patient Removal

- Move to extraction point
- Extricate Patient Head first
- Pass victim from water to rescuers to on land



Rescue Clean-up

- Allow all ropes to completely dry before repacking into bags.
- Turn rescue suits inside out to completely dry.
- Ensure all rescue equipment is accounted for and back in-service.

