Maryland Fire and Rescue Institute
Drill of the Month – June 2002

Water and Ice Rescue Operations

Instructor Guide

Lesson 1: Water and Ice Rescue Operations

Time Required: 3 hours

Reading/Other Assignments: None

Teaching/Learning Level: 2

Teaching/Learning Aids:

- Chalkboard or easel pad
- Personal floatation devices
- Ice/cold water exposure suit

Behaviors to Foster:

Active participation and discussion to:

- Describe the process used to determine the last point seen
- Discuss interviewing witnesses and collect pertinent information
- List and define the differences between "warm" and "cold" water immersions
- List and define ice formations and characteristics
- Discuss the four tactical alternatives available to first responders prior to the arrival of the dive team
- Demonstrate use of water/ice rescue equipment available on responding apparatus

Task:

Identify and demonstrate the application of water/ice rescue procedures

Given:

A team assignment, task procedures to follow, personal protective equipment, personal floatation devices, exposure suits, rope, hose, hand tools, and related equipment

Standard:

So that the equipment is used correctly and the victims are removed safely.

Requisite Knowledge:

- Types of personal floatation devices
- Limitations of personal floatation devices
- Operating characteristics of throw bags/discs

Requisite Skills:

- Wear PPE
- Wear personal floatation devices
- Operate throw bag/discs

Resources/References:

- Maryland Fire and Rescue Institute. (1998). *Rescue Technician Instructor' Guide.* St. Louis, MO: Author.

- Anne Arundel County Fire Department (1986). *OPM 60: Guidelines Water and Ice Rescue Operations.* Millersville, MD: Author.

Attention: (Call to Order)

Motivation:

The water/ice rescue scenario is an emergency response that requires a rapid and efficient use of on scene personnel and equipment in order to bring a quick and successful resolution to the emergency. Personnel not familiar or proficient may find these incidents challenging, stressful, and dangerous.

Student Performance Objective (SPO):

Given information on water/ice rescue situations, the student will be able to identify, discuss and demonstrate the basic requirements for handling water and ice rescue emergencies. The student will meet the performance requirements for OPM 60.

Enabling Objectives (EO):

EO 1-1 Describe the process used to determine the last point seen.

EO 1-2 Discuss interviewing witnesses and collect pertinent information.

EO 1-3 List and define the differences between "warm" and "cold" water immersions.

EO 1-4 List and define ice formations and characteristics.

EO 1-5 Discuss the four tactical alternatives available to first responders prior to the arrival of the dive team.

EO 1-6 Demonstrate use of water/ice rescue equipment available on responding apparatus.

Overview/Main Points:

- Last Point Seen
- Interviews
- Water Temperature
- Tactics
- Equipment

I. Determining Last Point Seen

a. Interview witnesses/survivors
b. Create line of site markers using fixed objects
c. Put diver in water to help witnesses mark last point seen (if victim was swimming)
d. Put a boat in water to help witnesses mark last point seen (if a boat was involved)

II. Conducting Interviews

a. Interview witnesses separately
b. Ask witnesses to describe accident while at the point from which they observed the accident.
c. How many people missing?
d. Don't forget the injured who made it to shore

III. Water Temperature and Time

a. Cold water immersions
    i. If water temperature is 70 degrees Fahrenheit or lower, carry out rescue efforts for 90 minutes from the time of the 911 call.
b. Warm water immersions
    i. If water temperature is above 70 degrees Fahrenheit, carry out rescue efforts for 60 minutes from the time of the 911 call
c. After these time frames, switch operations to recovery

IV. Ice Formations and Characteristics

a. The safest way to ensure personal safety is to stay off the ice
b. Frazil ice – initial ice crystals
c. Clear ice – strongest! Requires a long, hard freeze
d. Snow ice – milky or opaque, weak
e. Anchor ice – ice around obstructions
f. Drift ice – floating ice
g. Ice strengths – load capabilities based on thickness
    i. 1 inch = stay off!!
    ii. 2 inches = one person
    iii. 3 inches = three cross country skiers

iv. 4 inches = one ice fisherman
v. 5 inches = one snowmobile
vi. 6 inches = ice boating
vii. 7 inches = group activities
viii. 8 inches = one automobile
ix. 9 inches = several snowmobiles
x. 10+ inches = light truck

V. Tactical Considerations

a. Reach
   i. Makeshift aids
   ii. Pike pole
   iii. Ladder
   iv. Inflated hose
   v. Aerial apparatus
b. Throw
   i. Rope throw bag
      1. Up to 60' can be thrown, recovered and throw again
   ii. Rescue disc
      1. Similar to throw bag
      2. Requires less skill to deploy
   iii. Line gun
      1. Distances exceeding 60' require line gun
   iv. These methods depend on the victim's ability to hold on. The effects of hypothermia and the added weight of wet clothing may prevent the victim from holding on or even following instructions.
c. Row
   i. Often omitted by F.D. personnel do to unavailability
   ii. Don't overload vessel
   iii. Use motorized craft if available
   iv. Inflatable boats
d. Go
   i. Used for all victims who are confused and can not assist themselves
   ii. One man rescue
      1. Rescuer wears exposure suit with tether
      2. Keep low center of gravity if on ice

3. Float on back if in water using hands to paddle
4. During victim approach, roll while holding tether above your head
5. Attach line to victim by reaching leash around victim and clipping into main line with non-locking carabiner
6. Tap top of head to signal "OK" and to begin recovery
7. Rescuer and victim are pulled back to shore together

VI. Water/Ice Rescue Equipment

a. Allow students to familiarize themselves with equipment available at the drill location

VII. Practical Exercises

Evolution #1 – 1 hour

a. Arrange for time at a local pool in advance of the class
b. Assign students in teams of three
c. Anyone operating within 10' of the water must wear a Coast Guard approved Type II or Type III personal floatation device
d. Using an assortment of equipment appropriate for this exercise, allow the students to practice "reach" and "throw" techniques.

Evolution #2 – 1 hour

a. Arrange for time at a local pool in advance of the class
b. Assign students in teams of three
c. Anyone operating within 10' of the water must wear a Coast Guard approved Type II or Type II personal floatation device
d. Allow each student to don the exposure suit and participate in a victim rescue

Summary:

Lesson 1: Water and Ice Rescue Operations

Student Performance Objective (SPO):

Given information on water/ice rescue situations, the student will be able to identify, discuss and demonstrate the basic requirements for handling water and ice rescue emergencies. The student will meet the performance requirements for OPM 60.

Review/Main Points:

- Last Point Seen
- Interviews
- Water Temperature
- Tactics
- Equipment

Evaluation:

Oral Review:

Under each review point, recall and list three features from the discussion or list steps or safety features of each skill.

Other Evaluation:

The student will be evaluated through a skills proficiency checklist during the practical exercises.

Assignment: None