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

Winter Operations
Instructor Guide

Topic: Winter Operations

Level of Instruction:

Time Required: Two Hours

Materials:
- Appropriate Audio-Visual Support

References:
- Emergency Care, Eighth Edition, Brady
- Essentials of Fire Fighting, Fourth Edition, IFSTA

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PREPARATION:

Motivation:

Objective (SPO): 1-1

The individual will demonstrate a basic knowledge of winter operations and the precautions that need to be considered to provide for the safety of personnel, from memory, without assistance, to a written test accuracy of 70%.

Overview:

Winter Operations
- Types of Winter Conditions
- Personal Protection
- Vehicle Concerns
- Scene Operations

Winter Operations

SPO 1-1 The individual will demonstrate a basic knowledge of winter operations and the precautions that need to be considered to provide for the safety of personnel, from memory, without assistance, to a written test accuracy of 70%.

EO 1-1 Identify types of winter conditions that could affect emergency services operations.

EO 1-2 Identify personal protective measures that need to be considered during winter operations.

EO 1-3 Identify vehicle concerns that need to be considered in preparation for and during winter operations.

EO 1-4 Identify scene operation concerns that need to be considered during winter operations.

In many parts of the United States, the winter months mean times of colder temperatures and wintery precipitation. These conditions call for special precautions so that service providers can respond in a safe and efficient manner. This drill should be an interactive discussion with everyone having the opportunity to participate. The outcome should be a better understanding of any special measures that must be taken for winter operations.

I. Types of Winter Conditions (1-1)

A. Lower Temperatures
   1. Icy conditions
   2. Frost
   3. Wind chill resulting in even lower temperatures
   4. Greater reliance on heating systems
      a. Forced hot air or electric heat
      b. Space heaters
      c. Fireplaces
   5. Reduced physical endurance

B. Inclement Weather
   1. Snow or sleet
   2. Freezing rain
   3. Overcast skies
   4. Combination of wintery conditions

C. Shorter Periods of Daylight

D. Decreased Visibility Due to Precipitation

II. Personal Protection (1-2)

A. Clothing
   1. Layers of clothing
   2. Socks or other warm footwear
   3. Spare gloves
   4. Underclothing when responding at night
   5. Protective clothing worn completely and correctly
   6. Water repellant footwear
   7. Water repellant outerwear for EMS responders
   8. Footwear with good traction
   9. Extra socks and mittens available at the scene to replace damp ones or for those who do have them

10. Extra clothing may affect ability of personnel to perform tasks
11. Dress as if you are going to outside for a long period--you might be

B. Protect Crew
   1. Rotate crews to have fresh and warm personnel
   2. Rehab
      a. Place to rest and rehydrate with warm fluids
      b. Place to warm up
         1) Apparatus cabs
         2) Ambulances
         3) Heavy rescue units
         4) Buses
   3. Monitor health conditions
      a. Hypothermia
      b. Frostbite, especially on fingers and toes
   4. Stay dry and warm
      a. Outer shell of protective clothing absorbs water and can freeze
      b. Protective hoods absorb moisture including body perspiration
      c. Remember that the body loses heat a lot faster with wet clothing than dry
   5. Equipment problems
      a. Cold air from SCBA cylinders
      b. Freezing of facepiece exhalation valves
   6. Going from a fire and high heat environment to a overhaul or rehab environment - drastic changes in atmospheric temperature

III. Vehicle Concerns (1-3)

A. Vehicle
   1. Heating system providing heat in passenger area
   2. Cooling system maintaining motor cooling level
   3. Preventing freezing in pumps and water tanks (may require special measures such as transmitting heat from motor to pump area)
   4. Vehicle in good working order
      a. Mechanical systems
      b. Electrical systems
      c. Hydraulic systems
      d. Pneumatic systems

5. Good tire tread and proper tire pressure
6. Snow tires or chains available
7. Aggregate dispensing systems filled and working properly
8. Instant chains in good working condition
9. Gauges freezing
10. Gates and valves freezing

B. Operators
   1. Refreshed on cold weather vehicle handling and operations
   2. Driving in snow and/or icy conditions
   3. Limited visibility from motorists
      a. Precipitation
      b. Darkness
      c. Fog
      d. Emergency lighting at scene
   4. Aerial apparatus stabilizer operations on ice
      a. May require chipping away ice
      b. May require aggregate under stabilizer plates
      c. Subsequent melting may affect vehicle stability
   5. Vehicles parked on ice, especially on inclines, may slide, even with brake set

C. Equipment
   1. Keep equipment on apparatus dry to prevent freezing
   2. Keep oxygen in oxygen systems warm
   3. Prevent freezing in water-based fire extinguishers

IV. Scene Operations

A. Equipment
   1. Combustible gas meters may not work properly in cold weather
   2. Gasoline powered engines and power tools difficult to start and keep running
   3. Gasoline in portable pump or power tool tanks may have water in them causing freezing
   4. Hose becoming brittle and difficult to move
   5. Ladders freezing up affecting extension and retraction

6. Hand tool handles may become slippery

B. Scene Safety
   1. Ice forming on ground - may require aggregate
   2. Mist causing ladders to ice up - may require special climbing techniques to prevent slipping
   3. Cold air keeping toxic vapors low
   4. Watch traffic around emergency scene due to decreased visibility
   5. Consider extra traffic control measures due to decreased visibility and the requirement for greater stopping distances
   6. Steps and running boards on apparatus becoming slippery
   7. Recognize the signs and symptoms of hypothermia and frostbite

C. Operations
   1. Keeping patients warm and dry
      a. Extra blankets
      b. Plastic sheeting to keep dry
   2. Operating from elevated positions such as aerial ladders or platforms where temperatures may be colder
   3. Canteen service to provide warm beverages and food
   4. Extra staffing to rotate personnel
   5. Shelter for extended operations
      a. Apparatus
      b. Buses
      c. Other structures
   6. Gaining access to scene
      a. May not be able to get close to scene
      b. May not be able to access static water sources
      c. Fire hydrant caps may be frozen
      d. May require snow plowing to reach scene
      e. May require specialized vehicles
   7. Ability to remove and transport victims
      a. All-terrain vehicles
      b. Four-wheeled drive units
      c. Brush units or snow plows to accompany ambulances

8. Initiate salvage operations to keep contents from getting wet and freezing
9. Manage water runoff away from scene
10. Provide adequate scene lighting due to decreased visibility
11. Shutting off utilities may affect heating
12. Consider relocation of displaced victims
13. Consider relocating uninjured victims in auto accidents

SUMMARY:

Review:

Winter Operations

- Types of Winter Conditions
- Personal Protection
- Vehicle Concerns
- Scene Operations

Remotivation:

Assignment:

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EVALUATION: