TOPIC: Fire Hose Construction and Care

TIME FRAME: 1 Hour

LEVEL OF INSTRUCTION:

BEHAVIORAL OBJECTIVE:

Condition: A written quiz

Behavior: The student will be able to list and describe 5 types of fire hose, damage causing agents and proper care.

Standard: With a minimum of 70% accuracy

MATERIALS NEEDED:

- Cut-aways or samples of various types of hose
- Appropriate visual aids
- Audio visual equipment

REFERENCES:

- IFSTA, Essentials of Firefighting, 2nd Edition, Chapter 10

PREPARATION: Understanding the construction and classification of fire hose will enable you to perform fire ground tasks more effectively. Understanding the procedures to properly care for hose will ensure safer fireground hose evolutions and may reduce fiscal expenditures on this piece of equipment.

PRESENTATION	APPLICATION
I. FIRE HOSE CONSTRUCTION	
A. Sizes	
1. Small diameter hose	
a. 3/4"	
b. 1"	
c. 1 1/2"	
d. 1 3/4"	
2. Medium diameter hose	
a. 2 1/2"	
b. 3"	
3. Large diameter hose	
a. 3 1/2"	
b. 4"	
c. 4 1/2"	
d. 5"	
e. 6"	
B. Hose Construction Types	Information sheet #1
1. Braided	
2. Wrapped	
3. Woven	
C. Couplings	

PRESENTATION	APPLICATION

1. 1 1/2" or larger has national hose (NH) threads
2. Smaller than 1 1/2" couplings are national pipe straight hose (NPSH) threads

II. TYPES OF HOSE DAMAGE AND PREVENTIVE MEASURES

A. Mechanical damage

1. Types
   a. Cuts
   b. Abrasions
   c. Tears
   d. Stress
2. Preventive measures
   a. Smooth or cushion rough edges or corners
   b. Use bridge to protect from vehicular traffic
   c. Use chafing blocks to protect against vibration
   d. Open and close discharges slowly to prevent water hammer
   e. Maintain firm grasp on couplings
   f. Avoid excessive water pressure
   g. Avoid long term folds by rotating hose
   h. Avoid storing heavy objects on hose
   i. Load hose flat where possible instead of on edge

PRESENTATION	APPLICATION

B. Temperature Damage

1. Types

a. Flame contact

b. Contact with hot debris

c. Contact with pump/apparatus exhaust

d. Prolonged exposure

e. Prolonged exposure to direct hot sunlight

f. Freeze damage

2. Preventive measures

a. Reroute hose to avoid contact with heat source

b. Remove hose from dryer

c. Remove hose from direct sunlight

d. Run water continuously when temperature below 32o

e. Do NOT fold/roll frozen hose

C. Mildew and Mold Damage

1. Types

a. Fungus which attacks dead organic matter

b. Caused by

(1) Moisture in hose jacket

(2) Inadequate ventilation to allow evaporation

PRESENTATION	APPLICATION

2. Preventive measures

   a. Dry hose completely prior to loading or storing

   b. Cover hosebeds with water tight covers

   c. Inspect hose periodically

      (1) Visible

      (2) Musty smell

   d. Provide ventilation in storage areas

   e. Scrub hose with mild soap solution to eliminate mold/mildew

D. Chemical Damage

1. Types

   a. Petroleum products found on roadways

   b. Battery acid

2. Preventive measures

   a. Route hose around locations designated for vehicle parking where oils and acids are commonly found

   b. Keep out of gutters where chemicals run off with water from fire streams

   c. Thoroughly scrub contaminated hose with solution of bicarbonate of soda

III. FIRE HOSE MAINTENANCE

A. Scrub Hose with Clear Water as soon as Possible

PRESENTATION	APPLICATION
B. Rinse with a High Pressure Hose Stream While Scrubbing C. Use Mild Soap Solution if Hose Was Exposed to Oils or Chemicals D. Rinse Thoroughly with High Pressure Hose Stream After Hose Completely Washed E. Dry Thoroughly Prior to Loading or Storing	

SUMMARY:

By being professional in the manner that you use and care for fire hose, the potential for hose failure on the fireground will be lessened. Further money that would otherwise be spent to replace hose can be spent to upgrade other equipment.

EVALUATION:

A written quiz.

ASSIGNMENT:

To be determined by instructor(s).