TOPIC: ROAD FLARES AND REFLECTORS

TIME FRAME: :15

LEVEL OF INSTRUCTION: Level II

BEHAVIORAL OBJECTIVE:

Condition: A written examination

Behavior: Student will be able to list and describe the parts of a road flare, the basic uses of road flares, and general safety concerns.

Standard: With a minimum of 70% accuracy, according to the information contained in this lesson plan

MATERIALS NEEDED:

- A road flare
- Reflectors

REFERENCES:

PREPARATION: Road flares and reflectors are commonly used on highway related emergencies. Emergency workers tend to become complacent about these tools. Be aware of their potential to injure and the consequences of using them carelessly.

PRESENTATION	APPLICATION
I. TERMINOLOGY	
A. Flare cap	Information Sheet #1
B. Striker cap	
C. Striker	
D. Body/solid core	
E. Igniter	
F. Stand	
G. Pull strip	
H. Hollow tube	
II. GENERAL USE	
A. Short term emergencies	
1. 10, 15, 20, or 30 minute flares. Time duration noted on the flare	
2. Long term emergencies will require switching to cones, signs, and barriers	
B. Alert/caution	
1. Warn traffic of hazard or traffic control	
C. Control/diversion	
1. Can be set to form temporary lane changes to divert traffic around hazards or across a lane to block traffic	
D. Should not be held in your hand to direct traffic	

PRESENTATION	APPLICATION
	Why might it be a bad idea to use hand held flares to direct traffic?

1. Hot phosphorus could land on or in passing vehicles
2. Hot phosphorus can easily burn through clothing, even safety turnouts, and can cause severe burns

III. SAFETY

A. Road flares burn at approximately 1400 degrees F

B. Phosphorus is the main chemical

1. Vapors are toxic
2. You should avoid breathing them

C. Flares will splatter or sometimes shoot particles of hot burning phosphorus

D. Contact with water can cause small explosive-like reactions

E. Use gloves and eye protection when igniting and extinguishing road flares. Keep bare skin covered. Use PPE

NOTE: See appropriate lesson plan for igniting and extinguishing road flares

F. Avoid looking directly at flame for any length of time. Extreme brightness may damage or impair vision

G. Do not throw a burning flare down

1. Impact on burning end will cause explosive-like reaction
2. Burning particles will scatter many feet

PRESENTATION	APPLICATION

a. Fire hazard

b. Burn injury hazard

H. If raining, flare should not be set straight up, as raindrops hitting burning end directly can cause splattering of hot phosphorus (up to 20 feet)

I. Due to cylindrical shape, flares may:

1. Roll

2. Be blown away by air currents from passing vehicles

3. Be accidentally kicked, or

4. Be run over by vehicles requiring concern for where the flare may roll (Dry Vegetation, Fuel Sources, etc.)

a. Overcome these problems by:

(1) Carefully placing flares

(2) Constantly watch their placement

(3) Chock with rocks

b. Avoid using reflective lane designators to block flares. Heat will melt the designators

c. Some flares have a plastic tab that prevents them from rolling

(1) To utilize "Anti-Rolling Tab", place flare cap on the non-burning end of the flare after ignition

d. A wire stand can be made that holds the flare in place

Information sheet #3

4310.1

PRESENTATION	APPLICATION

J. Avoid use of road flares near flammable materials

1. Fuel or vapors flowing downhill

K. Most road flares have a hollow tube at one end, which allows flares to be joined end to end. To cause a flare to ignite when the previous one burns down you must lay the striking end on top of the bottom of the previous flare

L. Extinguishment

1. To safely extinguish road flare you should:

a. Find an area void of vegetation

b. Grind flare into ground rotating clockwise and counterclockwise

c. If necessary, use a small amount of water to assure complete extinguishment

(1) It may be necessary to extinguish the road flare slag as well.

IV. REFLECTORS

A. Traffic warning equipment types

1. Set of 3 reflectors

2. Triangle reflectors

3. Blinker type signals

4. Red warning flag mounted on a stand/base

5. Chemical lights (chem lights)

a. Excellent personal safety warning device

b. Hang on turnout jacket or tape to helmet

B. Use

PRESENTATION	APPLICATION

1. To alert and caution oncoming traffic about a disabled vehicle along the shoulder of the road

2. To indicate traffic is restricted ahead

3. To indicate traffic is blocked ahead

C. Set-up

1. To be set at 3 points along the roadway

   a. Distance and location depends upon particular circumstances at scene

      (1) Generally not to exceed 50’ from a visible vehicle

   b. Watch for blind corners or hills and valleys in the roadway

2. Each type of reflector device can have varied assembly requirements

   a. Be familiar with equipment specific to your apparatus

SUMMARY:

It is essential that firefighters recognize the hazards that are commonly associated with road flares. The safety of people using flares or working around flares could be jeopardized if flares and other traffic safety devices are handled or placed improperly.

EVALUATION:

A written examination

ASSIGNMENT:

To be determined by instructor(s).