TOPIC: Structure Fire Strategies

TIME FRAME: 2 Hours

LEVEL OF INSTRUCTION: Level II

BEHAVIORAL OBJECTIVE:

Condition: A written quiz

Behavior: Student will list and describe the essential factors and considerations in developing fireground strategy.

Standard: With a minimum of 70% accuracy

MATERIALS NEEDED:

- Appropriate visual aids
- Audio visual equipment

REFERENCES:

- NFPA, Firefighting Tactics & Strategy, Layman
- IFSTA, Fire Department Company Officer
- NFPA, Fire Command, Brunacini, 1985
- CDF, Health and Safety Handbook 1700, 1999

PREPARATION: Before any firefighting activity takes place, strategy must be developed and implemented. This process begins with the first in company officer and continues with all subsequent incident commanders.

PRESENTATION	APPLICATION

I. STRATEGY DEFINED

A. A Mental Process for Establishing Incident Abatement Objectives and Priorities

B. Responsibility of the Incident Commander

1. Person functioning as the I.C. may change but the responsibility for determining strategy does not

2. Must answer two questions

a) What are the objectives?

b) What sequence are the objectives to be accomplished in?

C. Priorities Will Always Be:

1. Life safety

a) Victims in imminent peril

b) Firefighters sent to assist

c) Persons needing evacuation

d) Bystanders

2. Fire confinement

a) Limit fire to involved rooms

b) Limit fire to involved structures

3. Property conservation

a) Limit primary (fire caused) damage

b) Limit secondary (firefighter caused) damage

PRESENTATION	APPLICATION

4. Determination of attack strategies must include a risk versus gain analysis

II. PRIMARY STRUCTURAL FIREFIGHTING STRATEGIES

A. Offensive - Direct (Interior) Attack

1. Objective is to apply water to the seat of the fire and reduce the fuel temperature below its ignition temperature

2. This should be the strategy of choice unless:

   a) Building collapse is imminent

   b) Structure totally involved

   c) Cannot meet 2 in/2 out criteria and rescue is not a factor

   d) Backdraft or flashover imminent

   e) Electrocution or explosion potential great

3. Advantage include:

   a) Life safety - increases probability of rescue

      1) Tenable environment for victims

      2) Discover victims during firefighting operations

   b) Fire confinement - is quicker and more effective

      1) Fire stream directed at seat of fire

      2) Better control of nozzle pattern and water application

   c) Property conservation - is greater

PRESENTATION	APPLICATION

1) Preliminary salvage operations may be instituted

2) Maintains thermal balance which assists in ventilation operations

3) Reduces amount of water used

4) Reduces threat to interior exposures, separate involved from uninvolved areas

4. Disadvantages

a) Life safety - increases risk of injury to firefighters

1) Exposed to extreme heat

2) Exposed to extreme fire behavior

3) Exposed to toxic environment

4) Exposed to risk of structural collapse

b) Fire confinement

1) Water application may not be adequate for amount of fire

2) Potentially longer set up time

3) May increase risk to exterior exposure

c) May not be an option if unable to meet 2 in/2 out criteria

B. Defensive - Indirect (Exterior) Attack

PRESENTATION	APPLICATION

1. Objective is to introduce water into structure from outside the structure to maximize steam generation which in turn provides cooling

    a) Hand held lines

        1) Steam production best if aimed at the ceiling with a fire stream which will penetrate well into the structure

        2) Rapid circular swing in clockwise direction

        3) Opening for nozzle should be of minimal size to maximize steam production

    b) At 212 degrees F. one (1) cubic foot of water will generate 1700 cubic feet of steam

        1) In confined space

        2) Amount of steam generated directly related to room temperature

            - Higher the temperature the higher the steam volume

2. Advantages:

    a) Life safety - firefighters operate in a more tenable environment

        1) Less heat

        2) Less exposure to extreme fire behavior

        3) Less toxic environment

        4) Less vulnerable to injury in event of to structural collapse

PRESENTATION	APPLICATION

b) Fire confinement

1) On large volume high heat fires potential for faster knockdown

c) Property conservation

1) Better position to protect exterior exposures

d) May be only option when unable to meet 2 in/2 out criteria

3. Disadvantages:

a) Life safety - probability of victim survival reduced dramatically

1) Body does not tolerate wet heat as well as dry heat

b) Fire confinement - more difficult

1) Fire stream placement on seat of fire more difficult

- Interior extension continues (natural)
- Interior extension encouraged, fire pushed into uninvolved areas

c) Property conservation - secondary damage (firefighter caused)

1) Water damage

- Nozzle pattern adjustment less timely
- Nozzle shutdown less timely

PRESENTATION	APPLICATION

- More water used

2) Smoke damage

- Ventilation efforts hampered in humid environment
- Smoke pushed into uninvolved areas

C. Combination - Offensive and Defensive Combined

1. Seldom used on a single fire building

a) May use defensive (exterior) attack to take heat out of fire quickly then employ offensive (interior) attack

b) Coordination of attacks is critical

2. Often used for exposure protection

a) Offensive (interior) attack on involved structure

b) Defensive (exterior) attack on exposed structures

SUMMARY:

As the initial attack Incident Commander it is your responsibility to develop an action plan. The first step in developing that plan is to determine what the potential risks are and what the potential gains are. When potential gains are high (e.g. rescue probable) and risks are low (e.g. firefighter safety not compromised), an interior attack strategy is called for. On the other hand if the potential risks are high (e.g. firefighter safety is compromised) and potential gains are low (e.g. persons within structure probably dead) a defensive strategy is indicated. The combination attack strategy may serve to reduce risk and increase gain in specific situations.

In any event, a strategy must be developed before the tactics to be employed are determined

EVALUATION:

A written quiz.

ASSIGNMENT:

To be determined by instructor(s).