



FIRE PROTECTION TRAINING

Procedures Handbook 4300

LADDERS

TOPIC: Fire Service Ground Ladder Safety Practices

TIME FRAME: :30

LEVEL OF INSTRUCTION: Level II

BEHAVIORAL OBJECTIVE:

Condition: A written quiz

Behavior: The student will list and describe safety practices to be observed when working with fire service ground ladders.

Standard: With a minimum of 80% accuracy

MATERIALS NEEDED:

- Appropriate visual aids
- Ladders
- Audio visual equipment

REFERENCES:

- IFSTA, Essentials of Fire Fighting, 5th Edition, Chapter 10

PREPARATION:

Fire service ground ladders are potentially dangerous under normal circumstances and use. They are large, awkward to carry or control and limit maneuverability. Under emergency conditions, especially in hours of darkness, they become substantially more dangerous.

Observance of safety rules can minimize the potential harm to everyone on the fireground and increase the effectiveness of ground ladder evolutions.



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FIRE SERVICE GROUND LADDER
SAFETY PRACTICES

| PRESENTATION | APPLICATION |
|---|-------------|
| <p>I. SAFETY RULES</p> <p>A. General</p> <ol style="list-style-type: none">1. There is no substitute for common sense2. Wear required safety clothing<ol style="list-style-type: none">a. Glovesb. Helmet and eye protectionc. Turnout coat and pantsd. Turnout bootse. Breathing apparatus if necessary3. Select correct ladder(s) for task<ol style="list-style-type: none">a. Proper type of ladder<ol style="list-style-type: none">(1) Single(2) Roof(3) Folding (attic)(4) Extension(5) Pole(6) Combinationb. Large enough to support operation<ol style="list-style-type: none">(1) Proper length<ol style="list-style-type: none">(a) Estimate 12 feet per story(b) Estimate 4 feet to window sills | |



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| <ul style="list-style-type: none">(c) Sufficient excess length to perform assigned task(d) Approximately five rungs (5th) above roof line(2) Proper strength<ul style="list-style-type: none">(a) Support weight of personnel and equipment(b) NFPA 1931 weight standards<ul style="list-style-type: none">(i) 300 pounds<ul style="list-style-type: none">a) Folding (attic) ladders(ii) 750 pounds<ul style="list-style-type: none">a) Roof laddersb) Extension ladders4. Employ sufficient number of ladders<ul style="list-style-type: none">a. Escape routesb. Expedite rescue or evacuation5. Assign sufficient staff to ladder operations6. Lift with legs and keep back straight7. Person at butt is generally ladder commander<ul style="list-style-type: none">a. Work as a teamb. Use standard commands for preparing and executing ladder maneuvers | |



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| <ul style="list-style-type: none">8. Unused ladders should be returned to apparatus or staging area9. Ladders have the right-of-way on the firegroundB. Carrying ladders<ul style="list-style-type: none">1. Proper number of personnel2. Use legs not back3. Use standard precautionary warnings<ul style="list-style-type: none">a. "Ladder coming through"b. "Ladder coming around"4. Watch for ground level hazards and obstaclesC. Raising ladders<ul style="list-style-type: none">1. Proper number of personnel2. Proper method for type and size of ladder3. Path free of overhead obstructions<ul style="list-style-type: none">a. Electrical linesb. Telephone linesc. Trees4. Use standard precautionary warnings<ul style="list-style-type: none">a. "Fingers and toes"b. "Pawls locked"5. Clear area of unnecessary personnel6. Position at strong points of structure | |



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| <ul style="list-style-type: none">7. Position upwind8. Position out of path of potential fire extension9. Position out of traffic patterns<ul style="list-style-type: none">a. Firefightersb. Victims/evacueesc. HoselinesD. Climbing ladders<ul style="list-style-type: none">1. Proper climbing angle<ul style="list-style-type: none">a. 75 degree angle<ul style="list-style-type: none">(1) Less than 75 degree angle puts unnecessary stress on ladder and reduces weight bearing capacity(2) Greater than 75 degree angle decreases the stability of ladder and encourages top of ladder to separate from the buildingb. Practical test<ul style="list-style-type: none">(1) Toes touching beams and palms on rungsc. Formula<ul style="list-style-type: none">(1) Height to be laddered divided by 4 plus measurement of overhang equals distance from building to butt of ladder2. Secure fly sections<ul style="list-style-type: none">a. If equipped with halyard<ul style="list-style-type: none">(1) Clove hitch and | |



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| <ul style="list-style-type: none">(2) Half hitchb. If no halyard use<ul style="list-style-type: none">(1) Hose strap(2) Ladder strap or(3) Rope3. Test ladder stability<ul style="list-style-type: none">a. Positioned on stable surfaceb. Positioned on level surfacec. Properly resting against structure<ul style="list-style-type: none">(1) Adequate structural integrity4. Secure ladder<ul style="list-style-type: none">a. Preferably top and bottomb. Tie off to structure with clove hitchc. Use assistant to heel the ladder<ul style="list-style-type: none">(1) Person heeling ladder should exert slight inward pressure since this "load" must be factored in when determining how much weight the ladder is supporting(2) At no time should person heeling ladder look upward(3) Person heeling ladder should have full PPE w/helmet and eye protection in place(4) Person heeling ladder shall hold the beams NOT the rungs | |



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| <ul style="list-style-type: none">5. Check to ensure pawls are locked prior to climbing onto each fly section6. Use legs to climb, not arms<ul style="list-style-type: none">a. Erect posture/back straight7. Maximum ladder loading is one person per fly sectionE. Working from ladder<ul style="list-style-type: none">1. Lock in prior to beginning<ul style="list-style-type: none">a. Safety beltb. Leg lock2. Announce working side so ground personnel know which side to work onF. Lowering ladder<ul style="list-style-type: none">1. Proper number of personnel2. Proper method for type and size of ladder3. Path free of overhead obstructions<ul style="list-style-type: none">a. Electrical linesb. Telephone linesc. Trees4. Use standard precautionary warnings<ul style="list-style-type: none">a. "Fingers and toes"b. "Pawls locked"c. "Clear"5. Clear designated area | |



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| <p>6. Control speed with which ladder lowered</p> <p>G. Inspect ladder after each use</p> | |



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SUMMARY:

Ground ladders are essential in rescue and fire extinguishment operations. They permit access to areas that would not be otherwise available. By their nature, ladders can be dangerous unless properly maintained and utilized. It is important that safety rules be followed to limit the number and severity of firefighter injuries.

EVALUATION:

A written quiz.

ASSIGNMENT:

To be determined by instructor(s).