



FIRE PROTECTION TRAINING

Procedures Handbook 4300

LADDERS

TOPIC: Ladder Terminology

TIME FRAME: :30

LEVEL OF INSTRUCTION: Level I

BEHAVIORAL OBJECTIVE:

Condition: A written quiz

Behavior: The student will list and describe the components of fire service ground ladders and the various ladder commands.

Standard: With a minimum of 80% accuracy

MATERIALS NEEDED:

- Various ladders
- Appropriate visual aids
- Audio visual equipment

REFERENCES:

- IFSTA, Essentials of Fire Fighting, 5th Edition, Chapter 10
- IFSTA, Fire Service Ground Ladders, 9th Edition

PREPARATION: Common terminology is essential for firefighters to properly identify ladder components and to safely and properly use any manipulate ladders during evolutions.



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LADDER TERMINOLOGY

PRESENTATION	APPLICATION
<p>I. LADDER REFERENCE POINTS</p> <p>A. Tip</p> <ol style="list-style-type: none">1. The extreme top portion of the ladder <p>B. Balance point</p> <ol style="list-style-type: none">1. Point approaching the middle of a ladder at which half the ladder's weight is distributed toward the tip of the ladder and half toward the butt2. Will be marked/taped on the ladder beams <p>C. Butt (Heel)</p> <ol style="list-style-type: none">1. The bottom or ground end of the ladder2. Used as the supporting surface when ladder is being raised <p>II. LADDER TERMINOLOGY</p> <p>A. Components</p> <ol style="list-style-type: none">1. Beam – main structural member of a ladder supporting the rungs or rung blocks2. Bed section – (base section) lowest or widest section of an extension ladder; this section always maintains contact with the ground or other supporting surface3. Butt (also called the heel), bottom end of the ladder; the end that is placed on the ground or other supporting surface when the ladder is raised	<p>Information sheet #1</p>



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<ol style="list-style-type: none">4. Butt spurs – metal safety plates or spikes attached to the butt end of ground ladder beams to prevent slippage5. Fly – upper section(s) of extension or some combination ladders6. Guides – wood or metal strips, sometimes in the form of slots or channels on an extension ladder that guide the fly section while being raised7. Halyard - rope or cable used for hoisting and lowering the fly sections of an extension ladder; also called fly rope8. Heat sensor label – label affixed to the inside of each beam of each ladder section, a color change indicates that the ladder has been exposed to a sufficient degree of heat that it should be tested before further use9. Hooks – curved metal devices installed on the tip end of roof ladders to secure the ladder to the highest point on the roof of a building10. Pawls – (also called dogs or ladder locks) devices attached to the inside of the beams on fly sections used to hold the fly section in place after it has been extended11. Pulley – small, grooved wheel through which the halyard is drawn on an extension ladder12. Rails – the two lengthwise members of a trussed ladder beam that are separated by truss or separation blocks13. Rungs - cross members that provide the foot hold for climbing; the rungs extend from one beam to the other except on a pompier ladder the rungs pierce the single beam	



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<ul style="list-style-type: none">14. Foot pads - rubber or neoprene foot plates, usually of the swivel type, attached to both of the ladder15. Stops - wood or metal pieces that prevent the fly section from being extended too far16. Tie rods - metal rods running from one beam to the other17. Truss blocks - separation pieces between the rails of a trussed ladder; sometimes used to support rungs <p>B. Operational terminology</p> <ul style="list-style-type: none">1. Bedded<ul style="list-style-type: none">a. A fully retracted extension ladderb. Position in which the ladder is carried on the apparatus2. Heeling - a method of anchoring a ladder prior to climbing it by having a firefighter positioned between the ladder and the building to be laddered exert a slight inward pull on the ladder3. Lowering in – procedure for positioning the tip of a ladder against a building after raising4. Lowering – procedure for removing a ladder from the raised position5. Nesting-storing ladders of differing sizes and/or types packed within one another6. Pivot - method for turning a ladder on one beam when the ladder has been raised to a near vertical position	



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<ul style="list-style-type: none">7. Taking out ladder - removing ladder from building and bringing it to the full upright position8. Tying off<ul style="list-style-type: none">a. Method of securing upper sections of an extension ladder by tying the halyard to a rung after the fly has been extended and lockedb. Method of securing ladder prior to climbing by tying it to a solid object	
<p>III. LADDER COMMANDS</p> <p>A. Warnings and advisories</p> <ul style="list-style-type: none">1. "Clear" - a precautionary warning indicating that personnel are about to lower a ladder and other personnel must be alert to leave or remain outside the lowering area2. "Fingers and toes" - a precautionary warning given immediately prior to extending or retracting the fly section of an extension ladder3. "Ladder coming around" - a precautionary warning given when carrying a ladder prior to executing a turn or change of direction on the fireground4. "Ladder coming through" - a precautionary warning given when carrying a ladder and when passing through an area of the fireground where other firefighters are present5. "Pawls locked" - an advisory given to inform other firefighters that the fly sections of an extension ladder have been secured by the ladder pawls	



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<ol style="list-style-type: none"><li data-bbox="302 346 1040 527">6. "Locked in" - an advisory that a person working from a ladder has been secured to the ladder with both hands free. Usually accompanied by an advisory as to which side of the ladder the firefighter is set to work from<li data-bbox="302 562 997 667">7. "Working left or right" - an advisory that the person on the ladder is prepared to work off the designated side of the ladder	



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SUMMARY:

Fire service ground ladders are necessary for a variety of fireground operations. The specific job will dictate which ladder is best suited. In order to effectively use these tools, it is helpful to use common terminology. This will minimize miscommunication and misunderstanding.

EVALUATION:

A written quiz.

ASSIGNMENT:

To be determined by instructor(s).