



FIRE PROTECTION TRAINING

Procedures Handbook 4300

LADDERS

TOPIC: How to Pick Up, Carry, Raise, Climb and Lower a 24' Extension Ladder - One Person Method

TIME FRAME: 1:00

LEVEL OF INSTRUCTION: Level II

BEHAVIORAL OBJECTIVE:

Condition: A 24' extension ladder lying flat on a level surface with fly section up, a wall, structural protective clothing and one assistant.

Behavior: The students shall pick up, carry, raise, climb and lower a 24' extension ladder, using the **high shoulder carry** and the beam ladder raise method under simulated fire conditions.

Standard: Following steps and procedures in proper sequence, according to the job breakdown with a minimum of 80% accuracy, within four minutes & fifteen seconds.

MATERIALS NEEDED:

- One (1) Set structure fire personal protective ensemble (PPE) per student
- One (1) 24' Extension ladder
- One (1) Assistant
- One (1) Stop watch
- One (1) Score sheet per student
- One (1) Manipulative performance test cover page

REFERENCES:

- IFSTA, Essentials of Fire Fighting, 2nd Edition, Chapter 5

PREPARATION:

A basic firefighting skill is the ability to handle a 24' extension ladder during emergency incident operations. With limited staffing on engines this skill becomes critical. If done improperly or in an unsafe manner the well-being of the firefighter and the public may be jeopardized.

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PRESENTATION

OPERATIONS	KEY POINTS
1. Position student	1a. On either side of ladder b. At ladder balance point c. Facing ladder tip, crouching with knee nearest ladder close to ground
2. Grasp ladder	2a. At balance point b. On nearest beam c. With overhand grip
3. Rotate ladder	3a. Up onto farthest beam b. Perpendicular to ground c. Using legs NOT back
4. Move to ladder tip	4a. While steadying ladder with hand nearest ladder b. Bending at the waist c. Walk to ladder tip
5. Grasp ladder top beam	5a. At tip of the fly section b. With overhand grip c. On top beam
6. Lift ladder	6a. Using legs b. In continuous fluid motion c. Simultaneously push lower beam upward with working hand d. Steadying ladder with free hand on top beam e. Until ladder in full upright/vertical position with both butt spurs in contact with the ground f. On bed section side



PRESENTATION

OPERATIONS	KEY POINTS
7. Move to balance point	7a. Place working hand between the lower beam of the base section of the ladder and the shoulder, palm up b. Slide working hand down bottom beam c. While supporting the top beam with the free hand d. Until balance point reached
8. Lift ladder	8a. From ground b. Bend at knees c. Leverage butt end upward to high shoulder carry position d. Keeping back straight and lifting with legs e. Adjusting ladder to position of comfort
9. Carry ladder	9a. To designated location b. Butt end tilted slightly downward for balance and better visibility c. State "ladder coming through" loudly prior to first step and when approaching other personnel d. State "ladder coming around" loudly prior to each turn or change of direction
10. Raise ladder	10a. Upon reaching designated location b. With fly section toward building c. Lower butt end of ladder d. Until butt spur on lower beam strikes ground e. Simultaneously push lower beam of



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	ladder upward with working hand f. Steadying ladder with free hand on top beam g. Until ladder in full upright/vertical position with both butt spurs in contact with the ground
11. Stabilize the ladder	11a. Grasping both beams b. From position facing ladder and building c. Placing instep of one foot against the beam of the ladder at the butt d. Placing the inside portion of leg from the knee down against the same ladder beam e. Moving opposite leg back one step for stability
12. Grasp halyard	12a. With both hands b. Placing forearms across beams at shoulder height with elbows out c. Thumbs positioned downward d. Comfortable distance apart
13. Announce “fingers and toes”	13a. Loudly b. Precautionary warning
14. Raise fly section	14a. Utilizing halyard and hand over hand motion b. Both hands in contact with the halyard c. Ladder remaining in vertical position d. To proper height NOTE: In the event the student needs to

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	grasp the ladder to maintain control, the beams, not the rungs, must be grasped
15. Lock in fly section	15a. Lowering fly section b. Until pawls "lock" onto rung
16. State "pawls locked"	16a. After visual inspection of pawls b. Loudly
17. Lower Ladder	17a. Into building b. Slowly c. Hands placed on beams at chest height d. Ball of either foot on bottom rung
18. Tie off halyard	18a. Wrapping excess halyard around two adjacent rungs b. Tie off using clove hitch c. Utilize half hitch to secure excess halyard
19. Check climbing angle	19a. 75 degree b. Facing the ladder and building with toes against beams at butt of ladder c. Extend arms outward parallel to ground d. Palms reaching ladder rungs
20. Adjust climbing angle	20a. If necessary b. Facing side of either ladder beam c. Bending knees slightly d. Back straight e. Placing hands in front and back of ladder and on different rungs

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OPERATIONS	KEY POINTS
21. Heel the ladder	f. Lifting ladder into proper climbing position one step at a time 21a. Requesting an assistant to heel the ladder Or b. Secure the ladder to an anchor point on building utilizing a clove hitch
22. Climb ladder	22a. Cautiously and smoothly b. Grasping alternate rungs in hand over hand fashion c. Checking that pawls are "locked" prior to stepping on fly section d. Until desired height reached
23. Lock in with leg lock method	23a. Passing either leg between adjacent rungs b. Wrapping foot back through ladder and anchoring toes over ladder beam
24. Work off the ladder	24a. State side loudly b. Extending both arms and hands fully in that direction c. Working direction will be opposite leg lock side
25. Decend the ladder	25a. Cautiously and smoothly b. Placing alternating hands on alternate rungs c. Placing alternating feet on alternate

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OPERATIONS	KEY POINTS
	rungs
26. Unsecure the ladder	26a. Dismissing person heeling the ladder or b. Untie the clove hitch securing ladder to an anchor point on building
27. Adjust climbing angle	27a. If necessary b. Facing side of either ladder beam c. Bending knees slightly d. Back straight e. Placing hands in front and back of ladder and on different rungs f. Lifting ladder nearer building to increase leverage for taking ladder out
28. Untie the halyard	28a. If ladder needs to be repositioned, halyard must be tied
29. Taking the ladder out	29a. Facing the ladder and the building b. With the ball of either foot on the lower ladder rung c. Hands grasping the beams at chest height d. Leveraging the ladder away from the building e. Until in full upright/vertical position
30. Stabilize the ladder	30a. Grasping both beams b. From position facing ladder and building c. Placing the instep of one foot against the beam of the ladder at

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	the butt d. The inside portion of the leg from the knee down against the same ladder beam e. Moving the other leg back on step for stability
31. Grasp the halyard	31a. With both hands b. Placing forearms across beams at shoulder height with elbows out c. Thumbs positioned downward d. Comfortable distance apart
32. State "fingers and toes"	32a. Loudly b. Precautionary warning
33. Lower fly section	33a. Raising fly section sufficient to unlock pawls b. Utilizing both hands in hand over hand motion on halyard to brake fly sections downward momentum NOTE: In the event the student grasps the ladder to maintain control, the beams, not the rungs, must be grasped
34. Lock in fly section	34a. Lowering fly section until pawls reach bottom rung b. Raise fly until pawls lock on second rung
35. State "pawls locked"	35a. After visual inspection of pawls b. Loudly
36. Prepare to lower ladder	36a. Move hands to beams

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37. State "clear"	b. Visually check area into which tip of ladder will be lowered
38. Lower ladder	37a. Loudly b. Precautionary warning
39. Bring ladder to high shoulder carry position	38a. Facing corner of either ladder beam b. With one hand on each beam c. Tilt ladder towards self on a single beam d. Slide hand on bottom beam upwards to balance point with palm up while walking backwards
40. Carry ladder	39a. Bend at knees b. Keeping back straight and using the legs c. Leverage butt of ladder off the ground d. Supporting lower beam with working hand e. While supporting the top beam with the free hand f. Adjust to position of comfort
41. Prepare to ground ladder	40a. To designated location b. Butt end tilted slightly downward for balance and visibility c. Stating "ladder coming through" prior to first step and when approaching other personnel d. Stating "ladder coming around" prior to turning or changing direction
41. Prepare to ground ladder	41a. Lower butt of ladder until butt spur of

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OPERATIONS	KEY POINTS
	<p>bottom beam rests on ground</p> <ul style="list-style-type: none">b. Walk backwardsc. Sliding hand on lower beam of base section of ladder while other hand supports top beamd. Until tip of ladder reached
42. Ground ladder	42a. Using legs <ul style="list-style-type: none">b. In simultaneous continuous fluid motionc. Grasping top beam of fly section with overhand gripd. Pivot body inward toward laddere. Facing past tipf. Lower tip of ladder to ground while bending at knees
43. Student repositions	43a. Simultaneously rise and turn around to face butt of ladder <ul style="list-style-type: none">b. Steadying ladder by sliding hand along top beamc. Bending at the waistd. Walk to ladder balance point
44. Lay ladder on ground	44a. At balance point <ul style="list-style-type: none">b. Grasping top beam with overhand gripc. Simultaneously bend at knees and stepping away from ladder lower top beam to groundd. Fly section up



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APPLICATION:

Student will practice until proficient.

EVALUATION:

A performance examination.

ASSIGNMENT:

To be determined by instructor(s).