STEPLADDERS
USE AND CARE

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1. GENERAL

1.01 This section covers the use, inspection, care and storage of stepladders and includes safety precautions, to be followed in their use.

1.02 This section is reissued to add the D and E stepladders and to completely revise the section. Since this is a general revision, revision arrows will not be used. The Equipment Test List is affected.

2. DESCRIPTION

2.01 Two types of stepladders are provided as standard for building service work. They are designated as mechanics and building stepladders. The front or step section of the mechanics stepladder is provided with steps and the back section with oval rungs to permit working from either section. The building stepladder is lighter in construction, and the back section rungs are round and not intended to carry weight.

2.02 The D and E stepladders have side rails and treads of strong, light softwood and rungs of hardwood. When in use, the sections are locked in the open position by means of hinged spreaders, with the joint guarded, to prevent pinching type injuries.

2.03 The D stepladder (Fig. 1) is available in 6 and 8 foot sizes. The bucket shelf is useful for certain light building service work.

2.04 The E stepladder (Fig. 2) is available in 3-1/2, 5, 6, 8, 10, and 12 foot sizes and can be used as a general purpose ladder.

3. INSPECTION

3.01 Craft employees equipped with a stepladder shall examine the ladder each week for defects described in Table A. Employees using a stepladder which is normally stored in a garage, storeroom, etc, shall inspect the ladder prior to use.

3.02 Supervisors shall inspect stepladders used by forces under their supervision at least once each quarter.

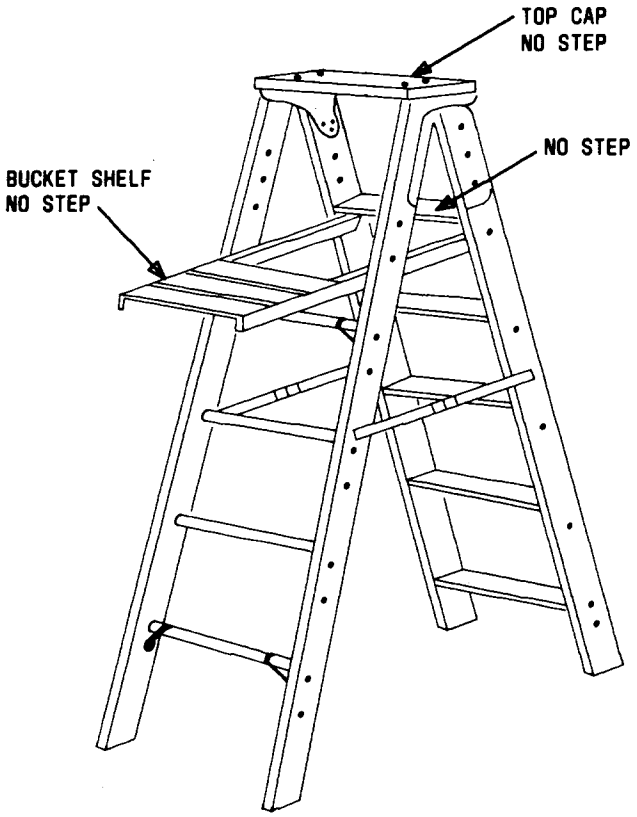

Fig. 1—D Stepladder

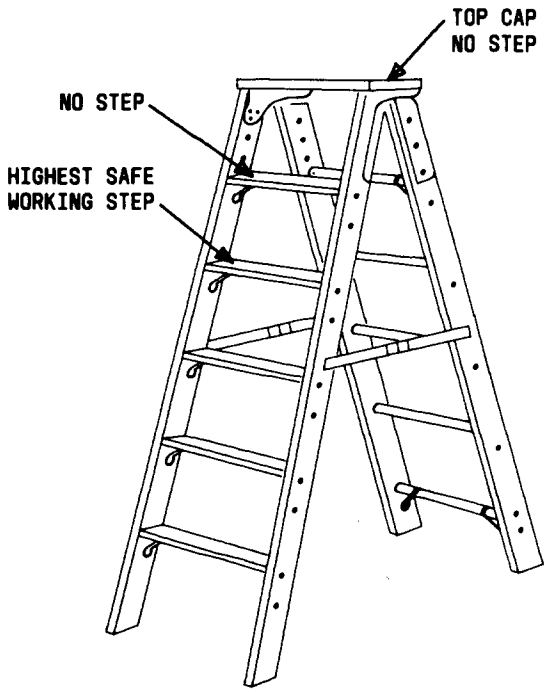

Fig. 2—E Stepladder

3.03 The inspection of a stepladder shall be made when the wood is dry. Absorption of moisture may cause swelling of the wood which could tend to conceal defects.

3.04 The ladder shall be examined to determine the condition of all parts as suggested in the following paragraphs. In order to facilitate a careful inspection for defects, it is advisable to place the ladder in a lighted and convenient position for examining all parts. If any of the defects listed in Table A, or if the condition of the ladder is such that there is any doubt about it being safe to use, it should be exchanged at once for one in good condition in accordance with established routine.

3.05 The following is a description of some of the most common defects found when inspecting wood ladders:

(a) ***Cracks:*** Fractures across the grain of the wood, usually resulting from mechanical stress.

(b) ***Decay:*** Disintegration of the wood due to action of wood destroying fungi.

(c) ***Splits:*** Separations of the wood fibers extending in the direction of the grain.

(d) ***Through Split:*** A separation extending from surface to the opposite surface.

(e) ***Checks:*** Separations of the wood along the fiber direction that usually extend across the annual growth rings resulting from stresses during seasoning.

(f) ***Compression Failure:*** Damage to the side rails may appear as a fine crack, as a fold or crease in the wood fibers, or splintering of the wood fibers. Such defects are usually caused by overloading a ladder to subjecting it to a hard blow, and may subsequently result in breakage of the ladder under normal loads.

3.06 Splits are most likely to occur at rung or tread intersection at the side rail and at the foot of the side rail.

TABLE A

STEPLADDER — WEEKLY INSPECTION

PART OF STEPLADDER	INSPECTION	MAXIMUM LIMIT OF DEFECT (NOTE 1 AND NOTE 2)	CORRECTION
SIDERAIL AND TREADS	Delamination	See "splits"	
	Crushed or depressed	1/4 inch	
	Decay	Unacceptable	
	Splinters	— —	Remove by dressing rail with a wood rasp, file, knife, or sandpaper
	Checks	6 inches long, 1/2 inch deep (superficial checks due to weathering, not exceeding 1/8 inch in depth, are permissable in any number)	
	Compression failure *	Unacceptable	
	Cracks	Unacceptable	
	Splits (In any one foot length or siderail)		
	1. End split		
	Stop riveted	2 inches beyond rivet	
	Not stop riveted	2 inches	
	2. Splits due to nailing	2 inches beyond each side of nail	
	3. Splits from rung or rivet hole	2 inches on each side of hole	
	4. Through split	2 inches	
	Protruding nails	— —	Protruding nails shall be driven flush and set with a nail set.
	Treadwear	3/4 inch (loss of wood at lip of tread or ladder cap due to wear is permissable if the width of the tread or cap is not reduced by more than 3/4 inches)	
RUNGS	Cracks	Unacceptable	
	Splits	2 inch maximum beyond tenon	
	Splinters	Acceptable if removable by dressing without exceeding maximum	
	Checks	6 inches long, 1/2 inch deep (superficial checks due to weathering, not exceeding 1/8 inch in depth, are permissable in any number	
	Looseness	Unacceptable	
	Missing	Unacceptable	
	Decay of joint†	Unacceptable	
	Excessive wear	Diameter less than 7/8 inch	
HARDWARE (BRACES, BRACKETS, RIVETS, AND HINGES)	Loose		Where practical, loose rivets shall be tighted, by placing the head of a lineman's hammer, or equivalent, against the head of loose rivet. Peen the other end of the rivet with a ball peen hammer until tight. If this does not correct the condition, replace the ladder with local procedures
	Missing	Unacceptable	
	Broken	Unacceptable	
	Cracked	Unacceptable	
	Defective	Unacceptable	

Note 1: A ladder having a condition exceeding these limitations shall be removed from service.

Note 2: Defective hardware exceeding these limitations may be repaired or replaced. If not corrected, the ladder must be removed from service.

* Compression failure in the wood fibers is most likely to occur at rung location. The wrinkles or creases may appear alone or with some splitting of the wood fibers on the opposite side of the rail. Ladders with this condition shall be removed from service.

† Decay at joints may be detected by tapping the rung near the side rail with a hammer handle and comparing the sound with that of sound rails. Do not strike rungs with head of hammer.

3.07 Thoroughly inspect the ladder on a weekly basis or prior to use for any of the conditions listed in Table A.

3.08 ***Disposition of Defective Stepladders:*** Stepladders which have developed defects which cannot be repaired in the field shall be withdrawn from service for repair or destruction. Employees shall tag such ladders as "Dangerous, Do Not Use" and return for disposition. If the company has established the practice, employees remote from the storeroom shall destroy and dispose of irrepairable ladders upon instructions to do so by the supervisor. Defective ladders shall not be destroyed if they are required in connection with an investigation that may be made to determine the cause of an accident or ladder failure.

4. USE

A. General

4.01 Each employee using a stepladder shall at all times assume the responsibility of determining that the ladder is in good condition and that its appearance indicates neither deterioration nor injury sufficient to affect its strength.

4.02 When obtaining a stepladder, employees shall examine them for possible defects described in Table A.

4.03 If a ladder has been dropped or subjected to any other treatment which might damage it, the ladder shall not be used until it has been inspected as described in Part 3 and found to be satisfactory for use.

4.04 Supervisors shall assure themselves that craft employees perform a visual inspection weekly. Stepladders are to be inspected each quarter by supervision.

4.05 Employees working on stepladders should avoid carrying tools in their pockets if there is any possibility that the tools may fall out.

B. Selecting Correct Ladder

4.06 In selecting the proper length of ladders for a job, a ladder of sufficient length will be used so that work can be performed while standing no higher than two steps from the top cap. The top cap (Fig. 3) is the uppermost horizontal member of the stepladder and is not to be used as a step for working.

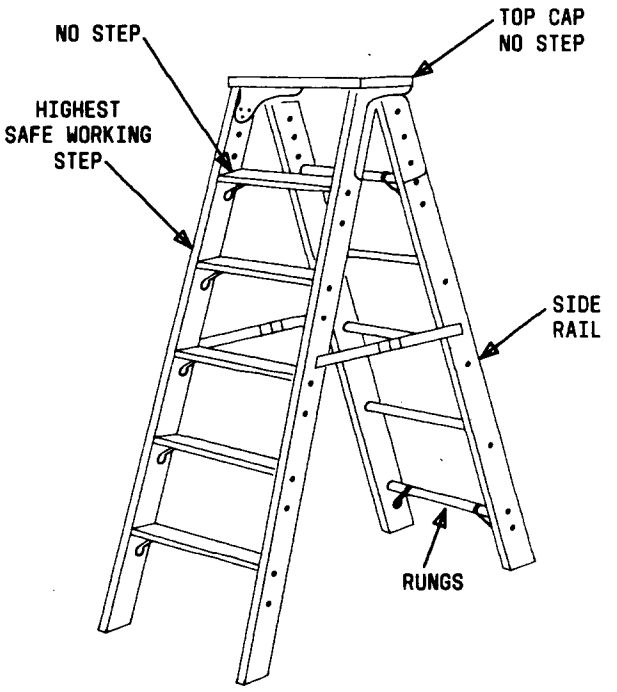

Fig. 3 — Stepladder (4 feet or larger) Maximum Working Height

4.07 Using ladders that are too short is a common cause of ladder accidents. Be sure to select a ladder of adequate length.

4.08 The D and E type stepladder is an industrial-type ladder built to rigid specifications for durability and safety. Therefore, a customer's ladder or a borrowed ladder is not to be used if a D or E stepladder is available.

4.09 A borrowed stepladder may be used by an employee only after it has been thoroughly inspected and found to be free of any defect which could contribute to an injury. If the ladder is of insufficient length, it shall not be used.

4.10 Do not use or stand on boxes, barrels, radiators, stools, chairs, and other unsafe substitutes for ladders.

4.11 The round rungs of the back section of the D and E stepladder provide structural support only and are not intended to carry weight.

C. Carrying

4.12 Stepladders up to and including the 8-foot size may conveniently be carried by one person as shown in Fig. 4.

4.13 Ladders over 8 feet in length should generally be carried by two persons, particularly where it is necessary to pass through equipment or office space, operating rooms, or busy corridors. Where it is necessary to handle ladders in narrow corridors, stairways or in congested space of any type, a workman should not attempt it alone if there is any doubt as to his ability to completely control the ladder.

D. Raising and Lowering

4.14 Ladders up to 8 feet in length may conveniently be erected by holding the ladder vertically balanced on the step section legs. The rung section is then pushed away from the step section as far as the workman can reach. The ladder then rests on all four legs and the spreaders are locked down.

4.15 In lowering ladders up to 8 feet in length, the spreaders are first lifted to form an acute angle at the joint. The workman then faces the side of the ladder and with a hand on each rail, pulls the front and back sections together. Care must be taken to grasp the rails so that the finger tips are not in a position where they will be pinched between the side rails of spreaders when the ladder is closed. When

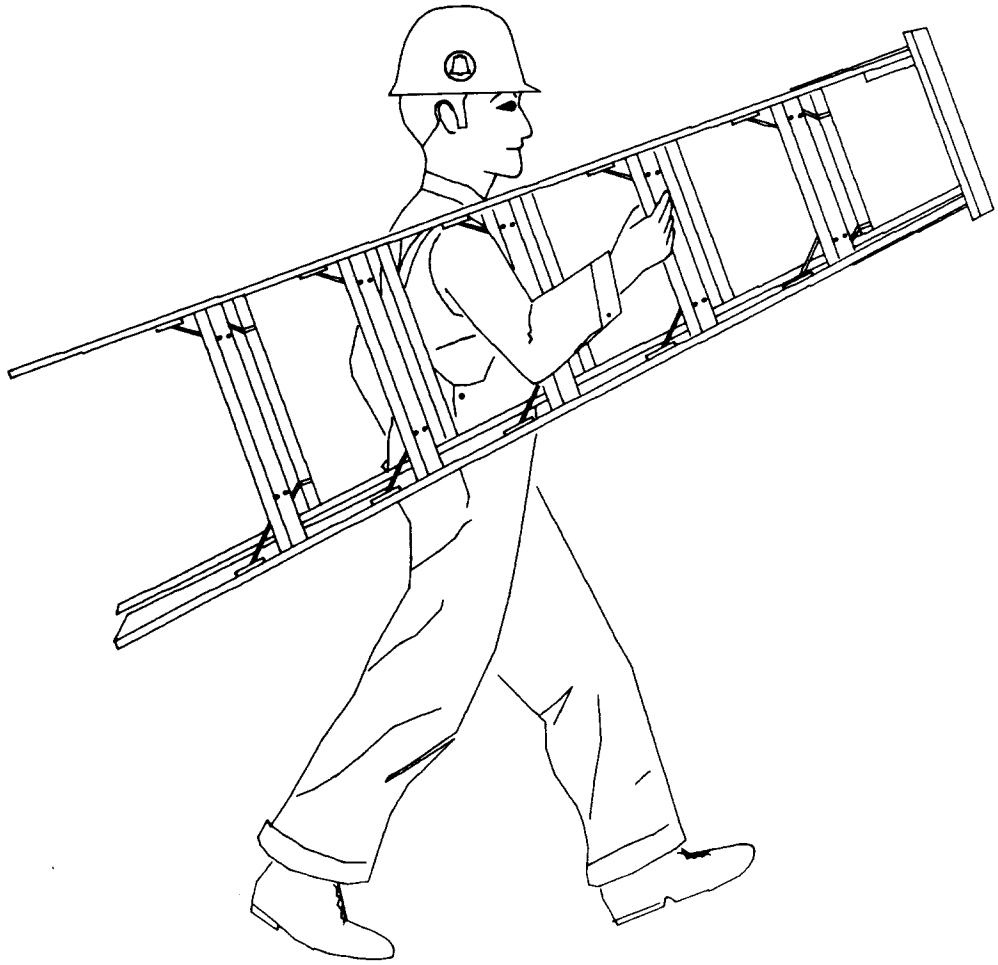

Fig. 4 — Carrying a Stepladder Under 8 Feet in Length

both sections have been brought together, the workman lowers the ladder.

4.16 Raising or lowering ladders over 8 feet in length in congested space or in close proximity to telephone equipment or moving machinery should be done by two workmen as outlined in paragraph 4.17 and 4.18.

4.17 In raising long stepladders, the ladder is first laid on the floor with the step section up and the feet at approximately the location where it is desired to have it stand. With the foot of the ladder securely braced by one of the workmen in the manner shown in Fig. 5, it is raised to a vertical position by another workman. After raising the ladder to the vertical position, the workman at the rung section then pulls this section open and locks the spreaders down.

4.18 In lowering long stepladders, one workman faces the step section with his feet braced against the bottom of the section. Another workman lifts the spreaders to form an acute angle, then grasps the rung section and lifting it slightly above the floor, pushes it against the front section. The same workman then backs up, lowering the closed ladder while the other man holds it braced against his feet.

E. Positioning

4.19 Stepladders are to be placed so as to provide a steady, firm, and reliable position while working from the ladder.

4.20 When it is necessary for a craft person to stand on a stepladder and pull wire or cable, position the stepladder for maximum stability with the pulling force toward the stepladder and in line with the long dimension of the base. If the wire slips or breaks in this position, the ladder will resist tipping over and the craft person will move toward the

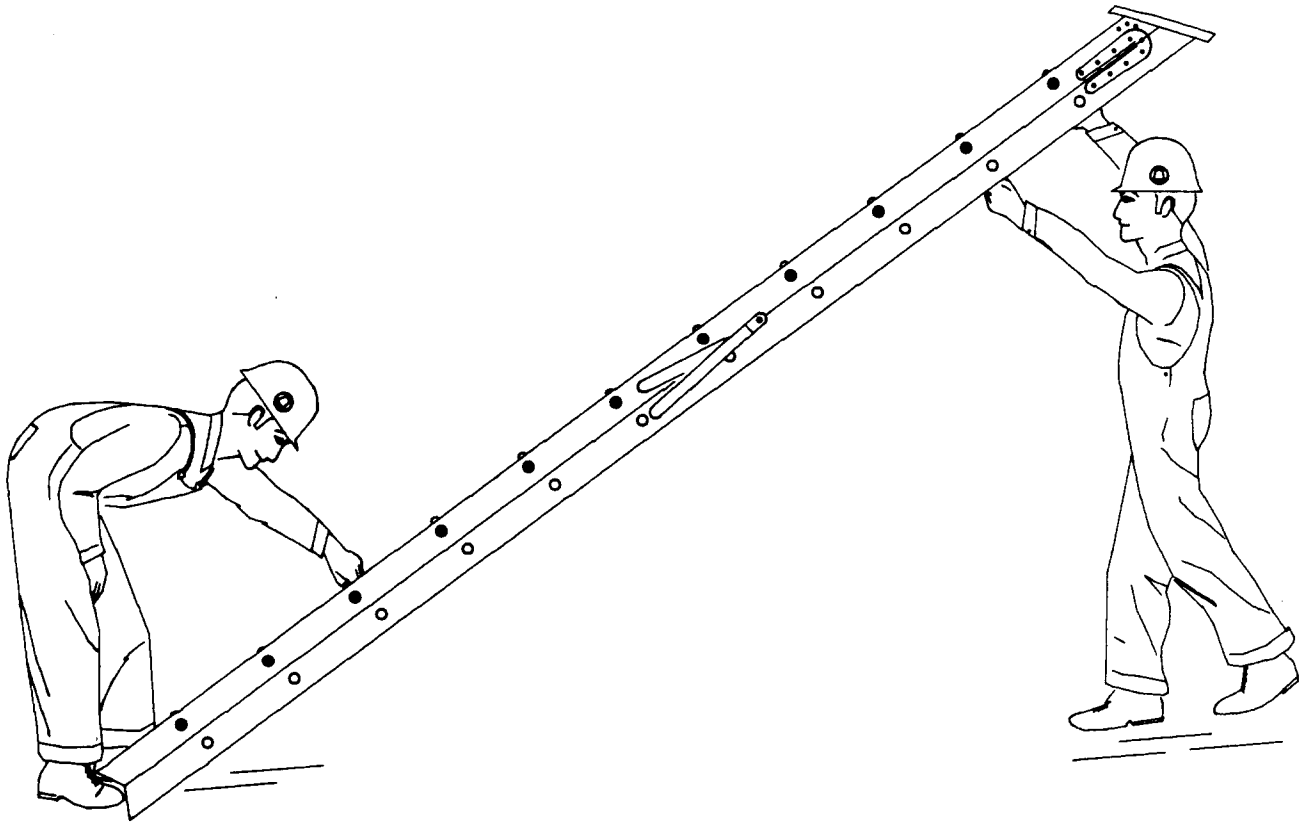

Fig. 5—Raising a Stepladder Over 8 Feet in Length

steps and not to the side or backwards away from the stepladder.

4.21 Stepladders shall be placed so the side rails have a secure and reliable footing. When used on a soft or uneven surface, a strong board shall be used to keep the ladder level.

4.22 Ladders shall not be placed on boxes, barrels, or other unstable bases to gain additional height.

4.23 Special precautions must be taken when positioning a stepladder near a door or passageway, and especially where a door will open towards the ladder. When working near a door, secure the door in the open position or arrange to have it locked to avoid it being opened inadvertently. Also, warning devices are to be used to alert others of activity beyond a closed door.

4.24 A stepladder is designed to be self-supporting and its use as a straight ladder will be avoided except where the base can be securely blocked, lashed in position, or held by another employee.

4.25 When in use, the hinged spreaders should be extended to lock the side rails in position and to provide maximum spread at the base of the stepladder.

4.26 When required, employees assigned to guard or hold a ladder will not leave the ladder unattended until the other employee has descended the ladder.

4.27 When ascending or descending a ladder, employees shall face the ladder, taking one step at a time.

4.28 The stepladder shall be positioned so an employee can work from the ladder without extending the breastbone beyond either side rail of the ladder.

4.29 The bucket shelf of the D stepladder is not designed to sustain a heavy load and is never to be used as a step.

4.30 Do not leave tools or equipment on the steps, top cap, or bucket shelf of an unattended stepladder.

4.31 Before moving a stepladder, make certain that nothing has been stored on the steps, top cap, or bucket shelf.

4.32 When working on ladders, take care not to overbalance. When it is necessary to reach to the side, take care that the body is not extended so far beyond the side rails as to unbalance the ladder. When it is necessary to exert a strong pull or push on a tool, apply the force in such a manner that if the tool slips, the body will move toward the ladder and not to the side or backwards.

4.33 Never step from one ladder to another without first descending.

5. CARE AND STORAGE

A. Care

5.01 Stepladders should not be dropped and heavy objects should not be allowed to fall or rest upon them.

5.02 Ladders shall not be used as guys, braces, or skids, or for other than their intended purpose.

5.03 So far as practical, keep ladders free from accumulation of dirt, oil, paint, plaster, etc.

5.04 Keep ladder rails, rungs, treads, etc, free from splinters by dressing with a rasp, knife, sandpaper, or other suitable means.

5.05 Stepladders are not to be painted. Painting could conceal possible defects. Wax should not be used on ladder steps or handrails.

B. Storage

5.06 Stepladders that are not being used should be stored at a location where they will not be exposed to the elements but where there is ventilation. Never store ladders near radiators, stoves, steam pipes, nor in places where the wood may be subjected to excessive heat or dampness.

5.07 At garages or storerooms, where ladder racks have not been provided, store stepladders in the verticle position. Do not store ladders in such a position where they would be subjected to pressure that would cause warping or twisting.

5.08 Ladders stored in company vehicles should be stored in such a manner so as to provide ease of access and prevent danger of an injury when with-

drawn for use. Improperly stored stepladders could be subjected to damage, especially splintering, if allowed to strike sharp-edged tools, hardware, or trunk body parts.