

TOOLS

USE AND CARE OF STEP-LADDERS

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1. GENERAL

1.01 This section covers the use, care, and maintenance of step-ladders and includes safety precautions to be followed in their use.

2. DESCRIPTION OF STANDARD STEP-LADDERS

2.01 Step-ladders are designated as Mechanics, and Building step-ladders. (a) The front or step section of the Mechanics step-ladder is provided with steps and the back section with oval rungs to permit working from either section. (b) The Building step-ladder is lighter in construction, and the back section rungs are round and not intended to carry weight. A pail rest is provided in the rung section to adapt it to cleaning operations.

3. SELECTING LENGTH OF STEP-LADDERS

3.01 In selecting the proper length of ladder for a job it shall be borne in mind that although the ladder itself may be stable on its base, the workman, if he stands on the top or the top step, cannot brace his legs against the ladder or readily grasp it to steady himself. For this reason it is desirable to use a ladder of sufficient length so that work can be

performed while standing no higher than two steps from the top if the ladder is over 48 inches in length and no higher than one step from the top if the ladder is 48 inches or less in length.

#### 4. SELECTING FOOTING FOR STEP-LADDERS

4.01 Step-ladders shall not be used on soft or uneven footing unless precautions are taken to prevent slipping by blocking the legs or lashing the ladder in position. Where it is necessary to block the legs a strong broad support that will not shift or break under load should be used.

4.02 Step-ladders may safely be used on moderate slopes provided that they are placed so that the direction of slope is downward from the step section to the rung section. When it is necessary to erect a step-ladder under such conditions, the footing shall be examined for slipperiness to insure against the ladder sliding. If there is any doubt as to its stability the ladder shall be steadied by another workman.

4.03 Step-ladders shall, where possible, be placed with respect to the location of the work so that it will not be necessary for the workman to extend his body beyond the sides. Where conditions will not permit this, additional precautions shall be taken, such as having another workman steady the ladder.

4.04 WHERE IT IS NECESSARY TO ERECT STEP-LADDERS IN FRONT OF ELEVATOR DOORS AND DOORWAYS, IN OR NEAR PASSAGeways OR AT ANY LOCATION WHERE THE LADDER MAY BE STRUCK BY VEHICLES OR PEDESTRIANS, THE LADDER SHALL BE PROTECTED BY LOCKING THE DOORS OR PLACING WARNING SIGNS OR BARRICADES. WHERE THIS IS NOT PRACTICABLE ARRANGEMENTS SHALL BE MADE TO HAVE THE STEP-LADDER GUARDED BY ANOTHER WORKMAN.

#### 5. CARRYING STEP-LADDERS

5.01 Step-ladders up to and including the 12-foot size may conveniently be carried by one person as shown in Fig. A. When carrying the ladder in busy corridors or on crowded sidewalks it shall be held as nearly vertical as possible. When carrying ladders in vertical position, look out for light and overhead fixtures.

5.02 Ladders over 12 feet in length shall generally be carried by two persons, particularly where it is necessary to pass through equipment or office space, operating rooms or busy corridors.

of any type, a workman shall not attempt it alone if there is any doubt as to his ability to completely control the ladder.

#### 5. RAISING AND LOWERING STEP-LADDERS

6.01 Ladders up to 12 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.

6.02 In lowering ladders up to 12 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 or spreaders when the ladder is closed. When both sections have been brought together, the workman lowers the ladder.

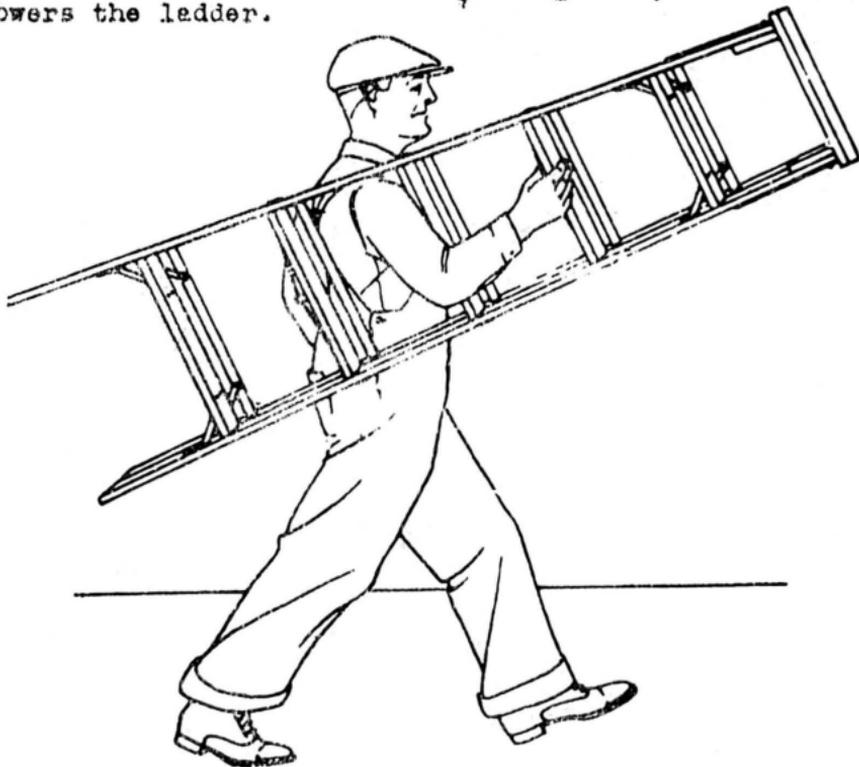


Figure (A)

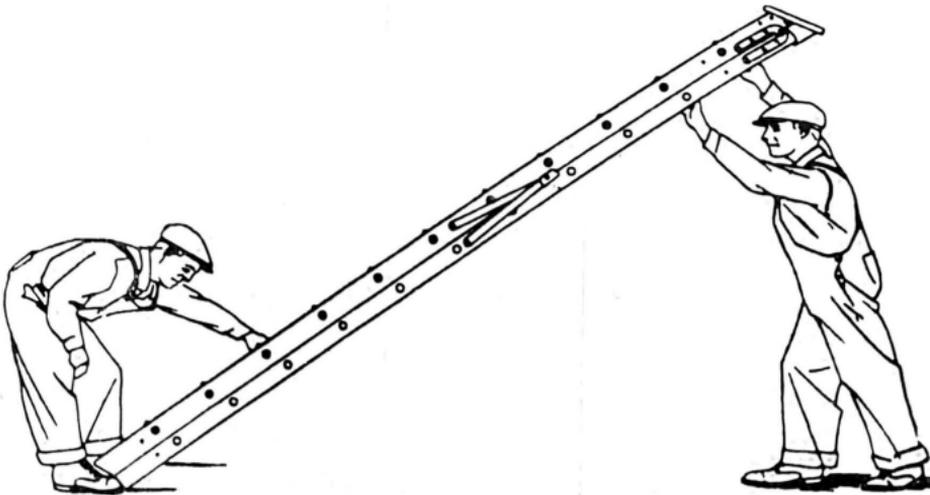


Figure (B)

6.03 When raising or lowering ladders in congested space or in close proximity to telephone equipment or moving machinery, special precautions shall be taken and if necessary the work shall be done by two workmen as outlined in Paragraph 6.04 and 6.05 below.

6.04 In raising long step-ladders, 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. B, 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.

6.05 In lowering long step-ladders 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.

## 7. INSPECTION ROUTINE

7.01 Each employee using a step-ladder 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.

7.02 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 8 and found to be satisfactory for use.

7.03 The supervisor shall inspect all step-ladders used by his forces at least quarterly.

## 8. INSPECTION

8.01 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 good light and in a convenient position for examining all parts. If any of the defects listed are found, or if the condition of the ladder be such that there is any doubt about it being safe to use, it shall be exchanged at once for one in good condition in accordance with the Company's established practice.

8.02 The important defects to look for in side rails are as follows:

(a) Damage to rail which may appear as a fine crack or as a fold or crease in the wood fibers or as a splintering of the wood fibers. Such defects are usually caused by overloading a ladder or subjecting it to a hard blow, and may subsequently result in breakage of the ladder under normal loads. The cracks or folds in the wood fibers are most likely to occur at rung-rail intersections and a very careful inspection is usually required to detect them. In most cases the folds or creases appear alone, but in some cases there also may be some splintering of the wood fibers on the opposite side of the rail.

(b) Splits that extend from one face of the rail through to the opposite face and are more than 24 inches in length, or that result in loosening of rungs, braces or steps.

(c) Protruding nailheads.

8.03 The important defects to look for in the steps and rungs are:

- (a) Cracked, split, badly splintered or decayed steps or rungs.
- (b) Loose step braces and loose tie rods.

8.04 Important defects to look for in fittings are:

- (a) Loose spreader hinges and loose spreader attachment plates.
- (b) Loose hinge joints and loose rivets holding hinge arms.
- (c) Loose pail rests.

8.05 Ladders shall be tested particularly for any tendency to sway or "walk" when shaken slightly in the open position. A ladder that sways easily should not be used until it has been tightened.

## 9. DISPOSITION OF STEP-LADDERS REQUIRING REPAIRS

9.01 Step-ladders which have developed defects which cannot be repaired in the field shall be immediately withdrawn from service for repair or destruction. Employees in the field shall see that such step-ladders in their possession are tagged or marked "Dangerous, Do Not Use" and returned to the storeroom. If the Company has established the practice, employees remote from the storeroom shall destroy and dispose of irreparable ladders, on the job, upon instructions to do so by the supervisor. Step-ladders that are considered junk 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 a ladder failure.

9.02 When disposing of a ladder remove and return to the storeroom all hardware which can be used to advantage in repairing other ladders. The defective ladder shall then be destroyed.

## 10. CARE OF STEP-LADDERS

10.01 Step-ladders shall not be dropped and heavy objects should not be allowed to fall or rest upon them.

10.02 So far as practicable, keep ladders free from accumulations of dirt, oil, paint, plaster, etc.

10.03 When the paint on a ladder is worn excessively, the ladder shall be repainted in accordance with the Company's established routine.

10.04 Ladder rails, rungs and steps shall be kept free from splinters. Splinters may be removed by dressing them with a knife, file or sandpaper.

## 11. STORAGE OF STEP-LADDERS

11.01 Step-ladders that are not being used shall 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.

11.02 Ladders shall be stored in such a manner as to provide ease of access for inspection and prevent danger of accident when withdrawing a ladder for use.

11.03 Where ladder racks have not been provided, step-ladders shall preferably be stored in a vertical position. Do not store ladders in such a position that they will be subject to pressure that would cause warping or twisting.

## 12. SAFETY PRECAUTIONS

12.01 Observe the following precautions when using step-ladders:

(a) IN GENERAL, BOXES AND OTHER SUBSTITUTES FOR STEP-LADDERS SHALL NOT BE USED UNLESS THEY HAVE BEEN DESIGNED FOR THAT PURPOSE. UNSAFE SUBSTITUTES, SUCH AS FOLDING CHAIRS, ROCKING CHAIRS, SWIVEL CHAIRS, CRACKER BOXES, ETC., SHALL NEVER BE USED.

(b) Using ladders that are too short is a common cause of ladder accidents. Be sure to select a ladder of adequate length as described in Part 3.

- (c) Do not leave tools or other articles on the steps, pail rest or top of a ladder.
- (d) Before moving a step-ladder always make sure that there are no tools or articles resting on the steps or top.
- (e) Always face the ladder when ascending or descending and do not hurry or try to take more than one step at a time.
- (f) When getting off a ladder avoid stepping on loose debris. If practicable, clear the area around the base of the ladder before ascending.
- (g) 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.
- (h) A step-ladder is designed to be self-supporting and its use as a straight ladder shall be avoided except where the feet can be securely braced or the ladder lashed in position.
- (i) Never step from one ladder to another without first descending.
- (j) Do not attempt to shift position of ladder while standing on it.
- (k) Only one workman shall be on a ladder at the same time.
- (l) Borrowed stepladders shall not be used unless they are inspected by the workman in accordance with Part 8 and found to be in sound and safe condition.
- (m) Never use the pail rest of a Building ladder as a step.
- (n) Mechanics working on step-ladders shall avoid carrying tools in their pockets if there is any possibility that the tools may fall out.

(o) A workman holding a ladder for another shall give it full attention. The safety of the man on the ladder is dependent upon the holder's vigilance.

(p) THE WORKMAN SHALL ALWAYS REMEMBER TO FIRST ERECT THE LADDER SO THAT IT IS STEADY AND THEN STAND ON IT SO THAT HE IS WELL BRACED, AND WILL NOT BECOME UNBALANCED AND FALL IF SOMETHING GOES WRONG. THE MANNER IN WHICH THE WORKMAN DOES THIS WILL DEPEND, OF COURSE, ON THE CONDITIONS OF THE JOB.