

LADDERS

1. GENERAL

1.01 For detailed descriptive and ordering information, refer to Section 081-740-105.

2. SAFETY PRECAUTIONS

2.01 Whenever possible in areas exposed to vehicular traffic, place ladder on the strand from the field side of the cable to avoid danger from passing vehicles. If vehicular traffic is not a problem, the ladder may be placed against the strand from the street side of the cable.

2.02 If a ladder must be placed at a work location where it may be struck by passing vehicles and a company vehicle is available, the truck should be parked with brakes set to provide maximum protection for the ladder without obstructing traffic. In addition, warning signs, flags, traffic cones, or flashing signals should be placed to divert the flow of traffic from the work area as described in Section 620-135-010.

2.03 Do not place a ladder inside or opposite an angle formed by wires or cables where loosening of the wire or cable attachments might cause the ladder to move or fall.

2.04 Make certain that ladder locks are engaged properly and the ladder rope is tied securely to one of the rungs of the bottom section before climbing an extension ladder.

2.05 If the ladder is equipped with ladder hooks and the ladder is to be used on aerial cable, turn the hooks to the working position before the ladder is raised. Ladder hooks should be placed on the cable strand unless ladder is to be lashed (see Fig. 5) as covered in 3.07. Do not turn the hooks in before descending the ladder.

2.06 Place ladders not equipped with ladder hooks against the strand so that at least two rungs extend above the strand when the craftsman is in position on the ladder.

2.07 If the top of the ladder is secured to suspension strand or other support the craftsman may increase his safety by using his safety strap as shown in the section on Body Belts and Safety Straps.

2.08 Do not throw tools or materials to a craftsman working on a ladder; raise them by means of a handline. Be careful that tools or materials being used aloft cannot fall on persons passing below.

2.09 Do not attempt to lean to the side so far that the outside shoulder is more than 12 inches beyond the side rail when working on a ladder. Loss of footing in this position may cause loss of balance. The weight being shifted to one side of the ladder may cause it to slip at the top. Descend and move the ladder to the proper location.

2.10 When working from ladders do not allow drop wires, lashing wires, handlines, or ladder ropes to dangle to the ground where they may be struck by passing vehicles. A wire or rope caught on a passing vehicle may pull the ladder causing it to fall or it may pull the craftsman off the ladder. The handline, when not in use, shall be tied to the lower portion of the ladder or pulled aloft.

2.11 Do not place ladders where they may come in contact with power lines.

2.12 Do not use a ladder in a horizontal position as a platform, runway, or scaffold.

2.13 Do not place a ladder against a suspension strand which is held under tension by a strand puller only.

2.14 When it is impossible to avoid placing the base of the ladder on a surface where it might slip, such as on wet or oily pavement, a smooth floor, or icy or metal surfaces, tie the base of the ladder securely in place. If this is impractical, the ladder must be held by another craftsman. The person holding the ladder shall be on the alert at all times to protect the person on the ladder

and anyone passing below him. Never leave a raised ladder unattended under these conditions. The ladder might slip and cause injury, damage, or both.

2.15 Avoid placing a ladder in front of a doorway, especially where the door opens toward the ladder. Avoid placing a ladder near passageways, near moving machinery, or at locations where vehicles or pedestrians may strike or displace it.

3. USING LADDERS

3.01 The maximum working length of an extension ladder is from 4 to 5 feet less than its given size. The maximum working length for the various sizes of ladder is given in Table A.

TABLE A

WORKING LENGTHS OF EXTENSION LADDERS

SIZE OF LADDER (FEET)	MAXIMUM WORKING LENGTH (FEET)	MINIMUM NUMBER OF RUNGS OF OVERLAP
16	12	4
20	16	4
24	20	4
28	24	4
32	28	4
36	31	5
40	35	5

3.02 Use care in positioning ladders before climbing them. Place the foot of the ladder on the ground or other firm support so that distance B (Fig. 1) from the base of the ladder to a line extended vertically from the top support (building or strand) is approximately one-fourth of the length of the ladder measured from top support to bottom support. If distance B is greatly exceeded, there is danger of imposing excessive stresses on the ladder. If distance B is considerably less than one-fourth of distance A, the ladder will be pitched

so steeply that the work cannot be done safely. In any case if the base of the ladder is likely to slip, the ladder shall be braced, fastened, or securely held.

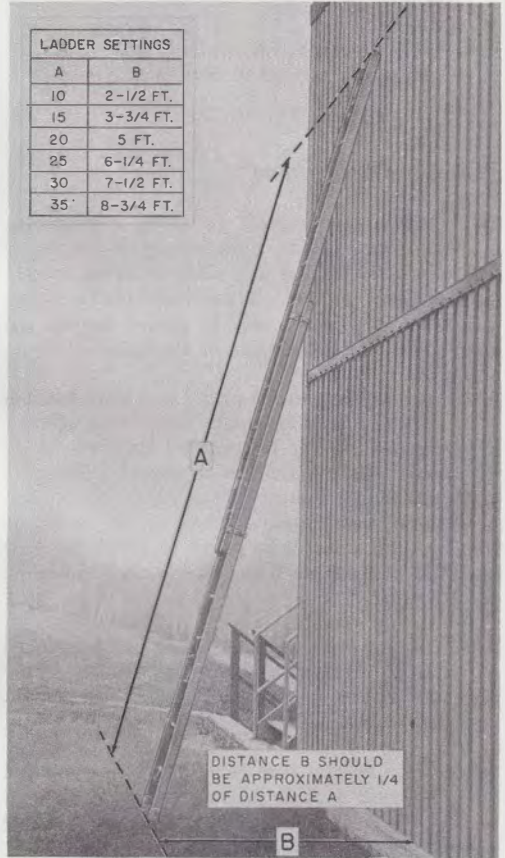


Fig. 1—Proper Ladder Angle

3.03 Set a ladder only on secure footing. Set both feet of the ladder at the same level and on a line parallel to the surface on which the top of the ladder rests. If necessary, employ a B Ladder Foot (Fig. 2) or remove earth from beneath the high side to bring it to the level of the lower side. **Never increase the length of a side rail by nailing a board to it.** If a ladder leans to either the right or the left, it is not

PLACE LADDER PAD ABOUT TWO INCHES FROM TOP OF LADDER RAILS WITH ARROW FACING UP AND TIGHTEN NUTS SECURELY

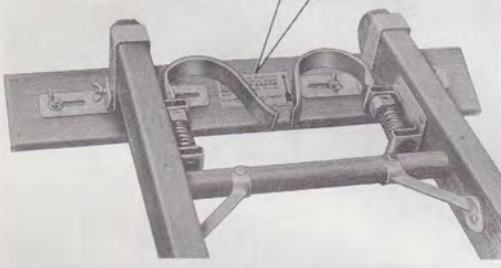


Fig. 4—Ladder Pad

push the wall attachment against rather than away from the building wall.

3.09 The use of the B (Fig. 7) or C (Fig. 8) Ladder Support permits sitting or standing between the ladder and cable. After the support has been fastened to the ladder and the strand the ladder must be lowered or the foot of the ladder moved out until the ladder falls beneath the strand and cable. Readjust height of ladder to that shown in Fig. 7 and 8.

Raising and Lowering

3.10 One man can raise a 24- or 28-foot extension ladder to a strand using the method shown in Fig. 9. Longer ladders may be raised using this method if two men are available. If there is a possibility of the handline becoming involved with tree branches, power wires, etc, place the handline over the strand with tree pruner handles, taking care to avoid contact with power wires. In doing this, exercise care to prevent the free end of the handline from interfering with passing vehicles.

NOTE:
PLACE THE LADDER SO AT LEAST TWO RUNGS EXTEND ABOVE THE STRAND WHEN IN POSITION FOR LASHING

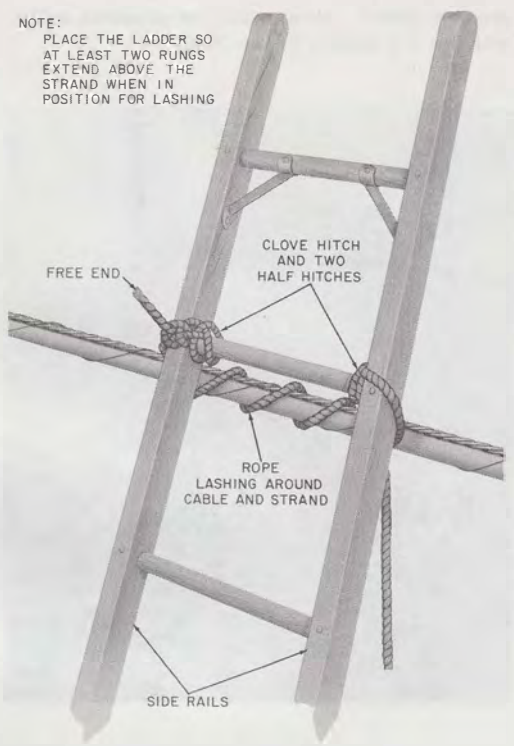


Fig. 5—Lashing Ladder to Strand

3.11 After raising ladder to vertical position, secure handline as shown in Fig. 10.

3.12 A 20-, 24-, or 28-foot extension ladder may be raised or lowered by one man in the manner shown in Fig. 11 if the foot of the ladder is securely embedded in earth or is placed against the base of a wall, a pole, or other secure object.

3.13 In general, a 32-, 36-, or 40-foot extension ladder should be raised with the foot of the ladder held securely by one craftsman, while a second craftsman walks the ladder up to a vertical position similar to that shown in Fig. 12. As an alternative, if the foot of the ladder can be placed against the base of a wall, one craftsman alone can raise the ladder as described in 3.12.

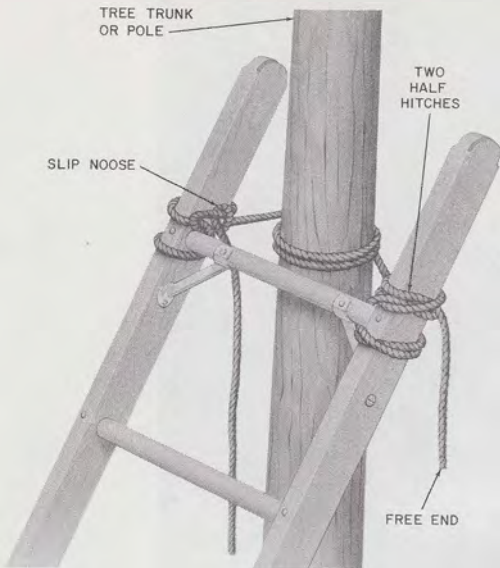


Fig. 6—Ladder Lashed to Tree or Pole

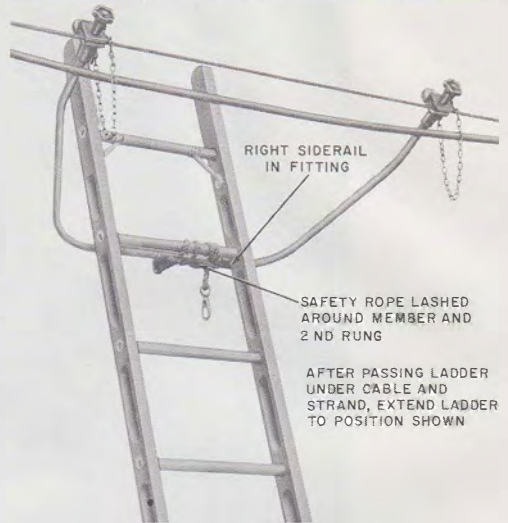


Fig. 8—C Ladder Support



Fig. 7—B Ladder Support

3.14 The method of raising the top section of 20- to 28-foot ladders is shown in Fig. 13.

3.15 As an alternate method after the ladder has been raised to an upright balanced position on a firm footing, balance the ladder with one hand and move behind the ladder in position to operate the ladder rope with the other hand, as shown in Fig. 14.

3.16 Pull the ladder rope to raise the top section two or three rungs at a time engaging the locks after each pull. Exercise care to prevent the lower guide iron from striking the hand holding the side rail. When desired height is reached, check that both locks are engaged and tie raising rope. To lower ladder, reverse procedures.

3.17 Raise 32- to 40-foot ladders as shown in Fig. 15. One craftsman shall hold the side rails of the lower section on the front side of the ladder during the raising and lowering of the upper section by another craftsman. Exercise care to prevent the ladder guide irons from striking and injuring the hands of the craftsman holding the side rails.

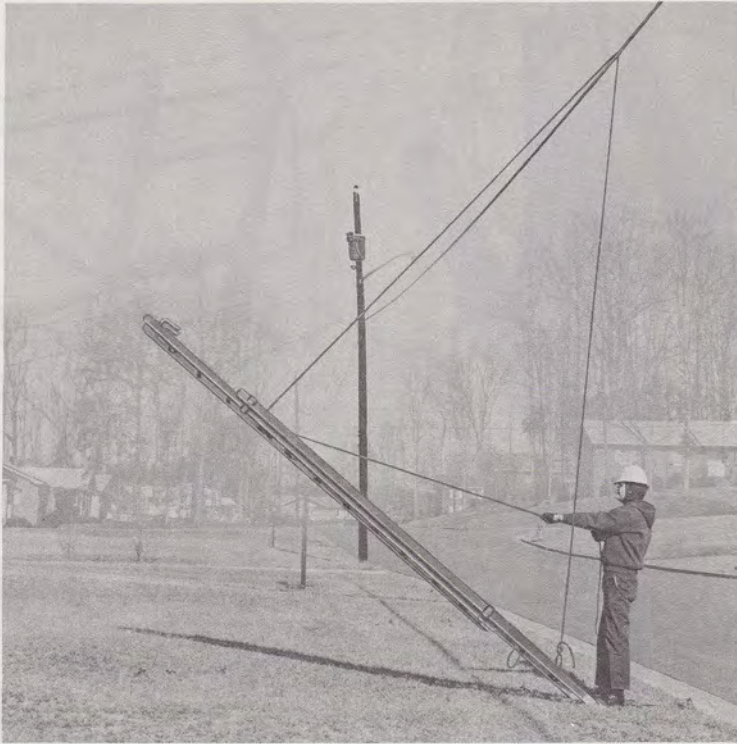


Fig. 9—Raising Extension Ladder, One Man Method

3.18 When transporting ladders on trucks or other motor vehicles, always fasten them securely in their proper position with straps or other devices provided for the purpose. Never use wire for securing a ladder to the brackets of a truck. A ladder hanging loosely on the brackets of a truck will soon be marred, cracked, and weakened by road shocks.

3.19 If an extension ladder extends an abnormal distance beyond the rear of a motor vehicle,

attach a warning flag or light to the projecting end of ladder.

3.20 Ladders should be carried as shown in Fig. 17 and 18.

3.21 The inspection and maintenance of extension ladders is carried in Section 081-740-105.



Fig. 10—Method of Securing Handline



Fig. 11—One Man Raising Ladder



Fig. 12—Two Men Raising Ladder



Fig. 13—Preparing to Extend Top Section



Fig. 14—Extending Top Section

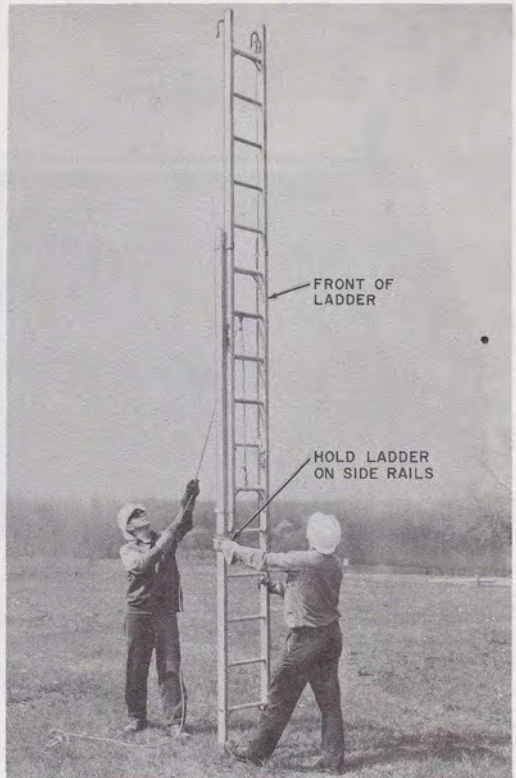


Fig. 15—Two-Man Method of Extending Top Section

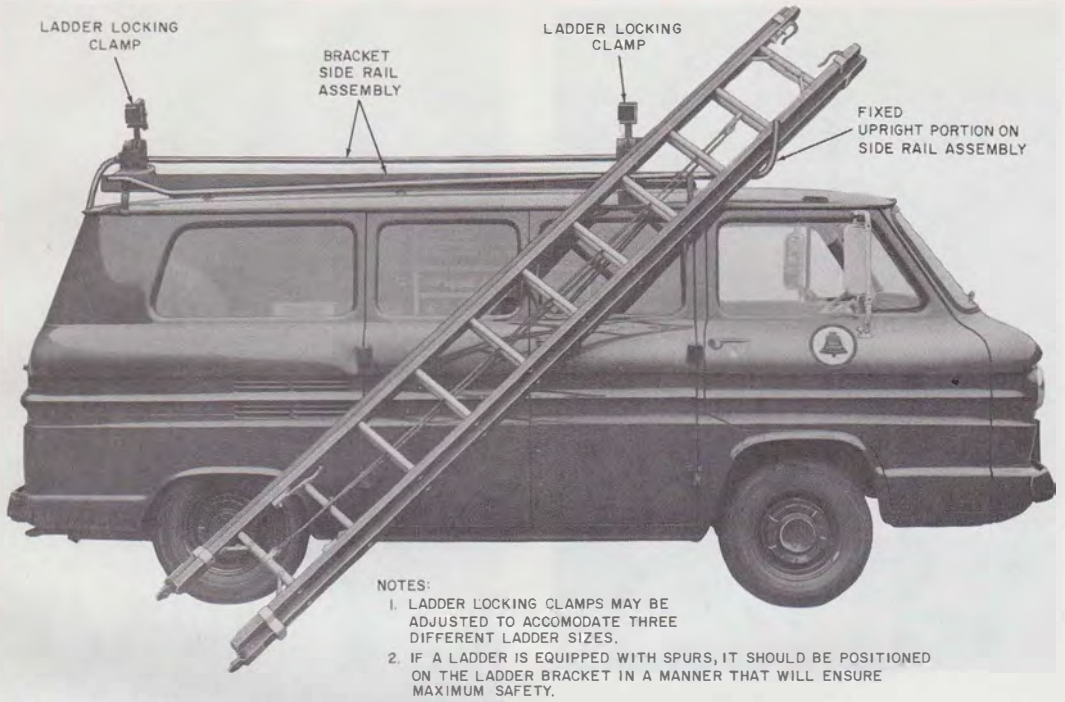


Fig. 16—Placing Ladder on Roof-Mounted Ladder Bracket

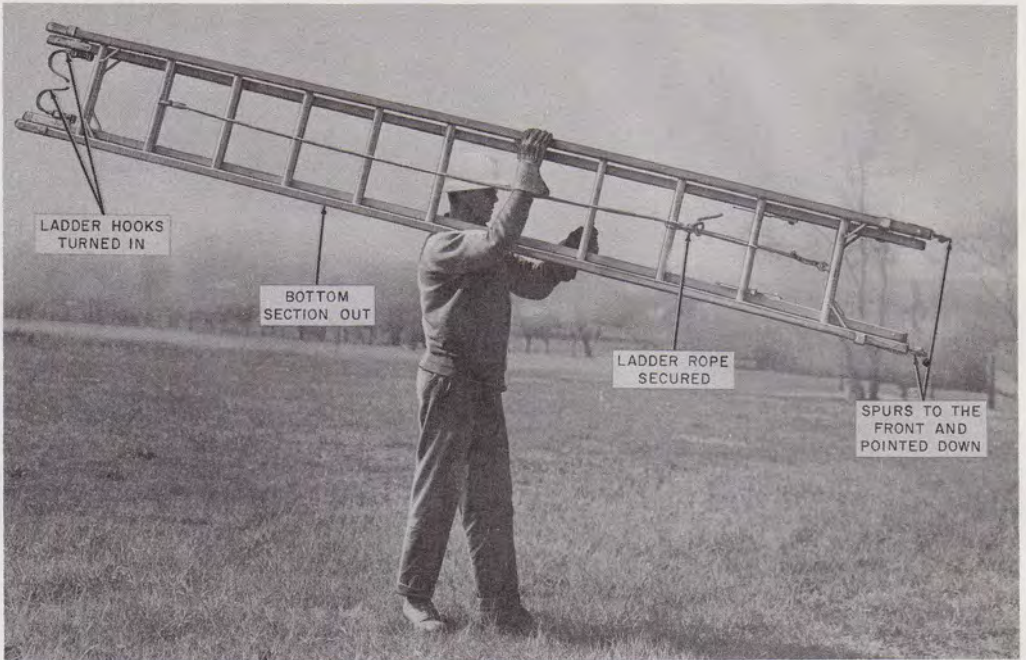


Fig. 17—One-Man Method of Carrying Ladder

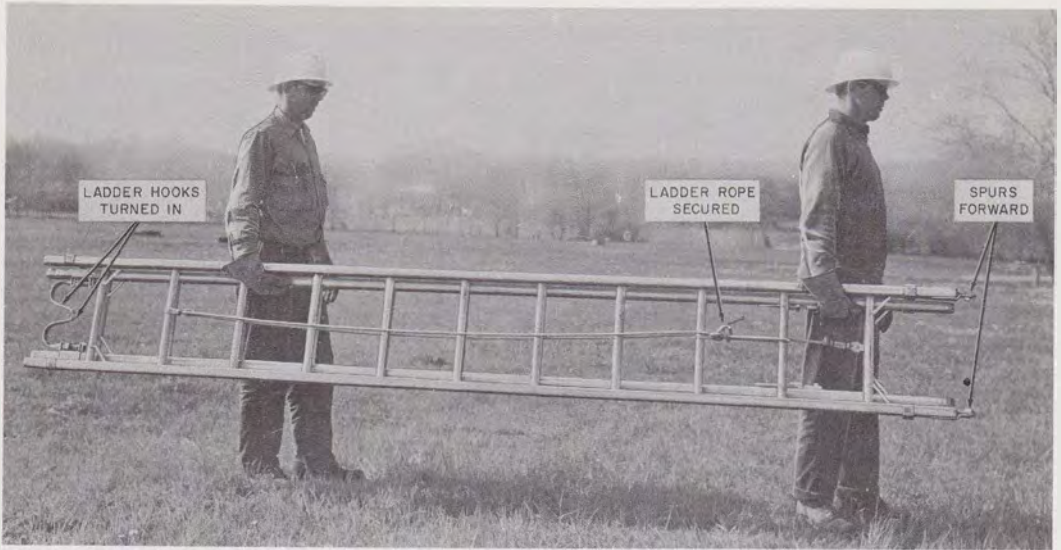


Fig. 18—Two-Man Method of Carrying Ladder