

STANDARDS FOR SAFE POLE CLIMBING

STEPPED POLES

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1. GENERAL

1.01 This section describes the universally accepted standards for climbing stepped poles, as taught at Bell System Training Centers. It specifically covers the basic techniques to be used to safely ascend, maneuver on, and descend stepped poles.

1.02 Whenever this section is reissued, the reason for reissue will be listed in this paragraph.

1.03 A number of illustrations have been provided in this section in order to clarify climbing techniques.

(a) When an illustration is provided, it always precedes the written narrative to which it pertains.

(b) Although some standards pertain to one side of the body, to one foot, to one hand, to one Dee ring, etc, they can be applied to either the right or left side, depending on the specific case. The illustrations used to depict these standards, however, show only one of the sides. The other side is the mirror image of the illustration shown.

(c) Where it is appropriate for additional clarification, the narrative following the illustrations will note in parentheses which side the specific illustration depicts.

1.04 It is recognized that there are many skilled and safety disciplined pole climbing employees in the Bell System. In some rare cases, the styles of some of these skilled and safety disciplined employees may not include or represent all of the standards in this section. In these instances, the techniques which these employees have used successfully for years may be acceptable for them as individuals. However, it should also be recognized that the standards in this section represent the best procedures, in terms of safety, for climbing stepped poles, and deviation from them almost always increases the accident risk.

1.05 The climbing habits of employees should be evaluated by the field supervisor under actual job conditions. The employees ability to observe, test, and adjust for or correct any hazards is to be included in the evaluation. Unsafe habits are to be corrected when detected and follow-up training is to be provided by the supervisor, when required.

1.06 In order for supervisors to be able to observe and correct deficiencies in an employee's climbing performance, they must have a complete understanding and working knowledge of this practice.

NOTICE

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2. GLOSSARY OF TERMS

2.01 In the contents of this section, terms describing pole climbing techniques may require clarification and, therefore, the following definitions are provided:

Ascending Foot: Foot which is moving in the direction of travel during climbing ascent.

Body Balance Maintained: The act of keeping one's balance, not falling, to maintain body stability.

Body Weight Shifted: The act of transferring one's body weight from one foot to another or from one foot to both feet.

Carrying Dee Ring: Dee ring on which the safety strap is carried (both snaphooks) when not in use.

Center of Pole: The heart of the pole; the point which represents the mean.

Center Line of Pole: A hypothetical line which divides a pole surface lengthwise, separating the front quarters of the pole.

Descending Hand: Hand which is moving in the direction of travel during climbing descent.

High Side of Pole: Pertains to poles which lean or those that are not set at a right angle to the ground. The high side of the pole is that side which is farthest from the ground and the low side is that side which is the closest to the ground.

Keeper: Part of the snaphook on the safety strap. Functions as a spring-loaded latch which allows the snaphook to be placed on and removed from the Dee ring.

Knee Locked: Referring to when the leg is fully extended and the knee is rigid or locked back to prevent the leg from bending at the knee.

Leading Foot: Foot which is foremost in the direction of travel when climbing. Applies to any act of climbing and/or maneuvering.

Proper Working Length: The distance of one arms length between the employee and pole when safetied on.

Quarters: The division of the circumference of a pole into four equal parts called quarters.

Quarters, Back: The back of the pole divided into two imaginary equal parts, consisting of a left and right back quarter.

Quarters, Front: The front of the pole divided into two imaginary equal parts, consisting of a left and right front quarter.

Safety Off: When the safety strap is removed from the pole, placed on the carrying Dee ring, and is no longer supporting the body weight.

Safety On: When the safety strap is positioned around the pole, secured to both Dee rings of the body belt, and maintaining body balance.

Step-Off Area: The ground area around a pole which extends no more than two normal steps from the pole.

Trailing Foot: Foot which follows while in the act of climbing.

Weight Centered Side: The side on which the body weight is centered (right or left foot supporting).

Weight Supporting Grip: Hand hold on pole step that keeps one from falling.

3. PRE-CLIMBING AND POST-CLIMBING CHECKS

3.01 Employees expected to climb poles must be familiar with and adhere to other associated safe work practices which are covered in other sections, such as:

SECTION	TITLE
081-020-010	Safety Head Gear
081-020-011	Eye Protection
081-705-101	B Voltage Tester
081-710-200	Insulating Gloves
081-720-101	Body Belts and Safety Straps
620-131-010	Precautions To Be Taken Before Climbing Poles

SECTION	TITLE
620-132-010	Testing Poles
620-135-010	Guarding Work Areas
627-295-500	Testing Suspension Strand

4. ASCENDING STEPPED POLES

PREPARING TO ASCEND

4.01 In order to successfully complete a climbing task, it is necessary that climbing equipment be properly positioned, secured, and adjusted. It is also necessary that the pole and surrounding area be inspected for climbing hazards.

4.02 Preparing climbing equipment:

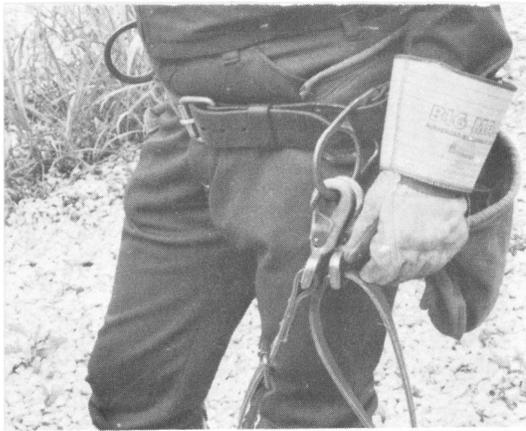


Fig. 1—Position of Body Belt and Safety Strap for Climbing

- (a) Position body belt on hips and buckle securely.
- (b) Engage safety strap on carrying Dee ring (left side Dee ring in Fig. 1).



Fig. 2—Engage Snaphook in Opposite Dee Ring

- (c) Check safety strap for proper working length.
 - Disengage top snaphook.
 - Transfer snaphook around pole.
 - Engage snaphook in opposite Dee ring (right side Dee ring in Fig. 2).



Fig. 3—Adjust Safety Strap to Working Length

(d) Adjust safety strap length, as necessary.

- With both feet against the base of pole and body erect, adjust the safety strap so one arms length is obtained when grasping the back of the pole.



Fig. 4—Restore Safety Strap on Carrying Dee Ring

(e) Restore safety strap on carrying Dee ring (left side Dee ring in Fig. 4).

- Stand upright with feet away from pole.
- Disengage the snaphook from the side opposite the carrying Dee ring.
- Transfer the snaphook around the pole.
- Engage snaphook in the carrying Dee ring.



Fig. 5—Inspect Mounting Brackets

(f) Visually inspect the mounting brackets for the B Pole Step for:

- A loose or missing screw or nail.
- Cracked or broken plate.



Fig. 6—Inspect B Pole Steps

- (g) Inspect the B Pole Step (Fig. 6) for:
- Cracked casing.
 - Bent slot.

4.03 Making final preparations for ascent:

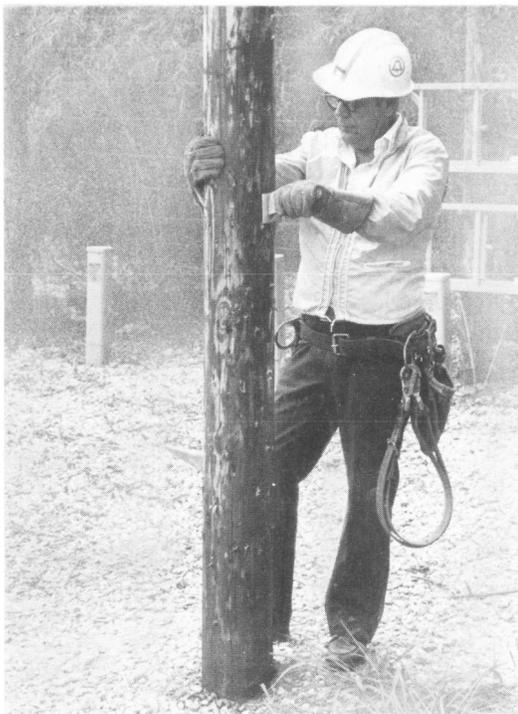


Fig. 7—Final Equipment Check.

- (a) Ensure that climbing equipment is properly secured.
- Buckles and straps of body belt and safety strap should be engaged.
 - B Pole Steps should be inserted in mounting brackets.
- (b) Ensure that tools and equipment necessary for the work operation are secured.

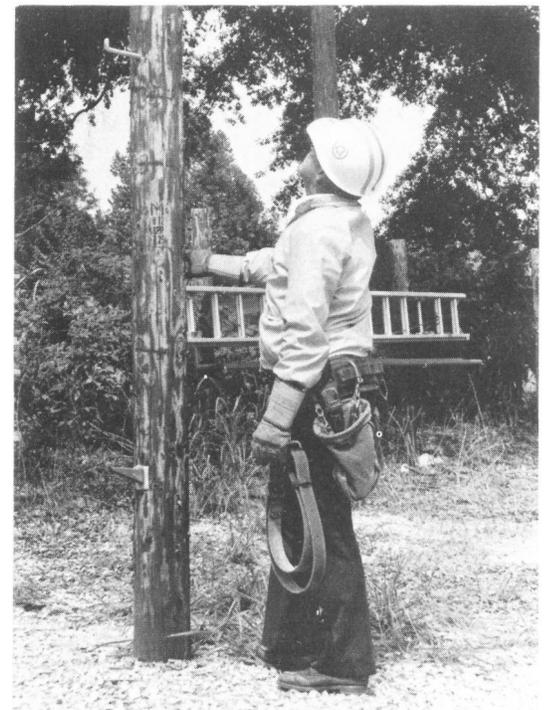


Fig. 8—Visual Inspection of Pole and Surrounding

- (c) Make a final visual inspection of the pole and work area immediately prior to ascending. Look for climbing hazards, such as:
- Electrical hazards
 - Physical condition of pole
 - Bell System and foreign attachments
 - Other (Uneven ground at base of pole, vegetation, insects, kites, ice, etc.)
- (d) Replace bent or missing pole steps.

SECTION 620-134-020

MAKING THE ASCENT

4.04 The coordination of hand and leg movement, together with the shifting of one's body weight while maintaining body balance is essential to develop a smooth climbing style. Paragraphs 4.05 through 4.07 illustrate these techniques.

4.05 Making initial contact:



Fig. 9—Initial Hand Contact

- (a) Position leading hand (right hand in Fig. 9) to ascend.
 - Grasp third pole step from ground.
 - Palm should be downward and centered over middle of step.
 - Fingers should encircle step with weight supporting grip.

- (b) Position trailing hand (left hand in Fig. 9) to ascend.

- Grasp second pole step from ground.
- Palm should be downward and centered over middle of step.
- Fingers should encircle step with weight supporting grip.

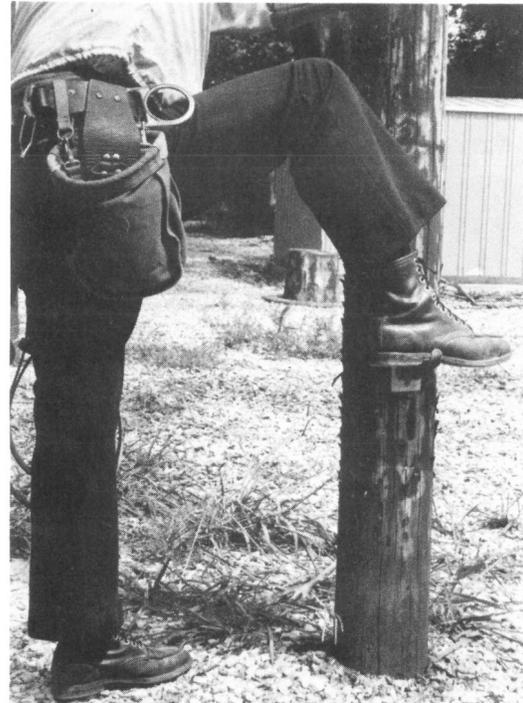


Fig. 10—Initial Foot Contact

- (c) Position leading foot (right foot in Fig. 10) to ascend.
 - Place foot on bottom pole step.
 - Center the arch of the boot over the middle of the step.
 - Lock ankle to keep foot in position.

4.06 Beginning ascent sequence

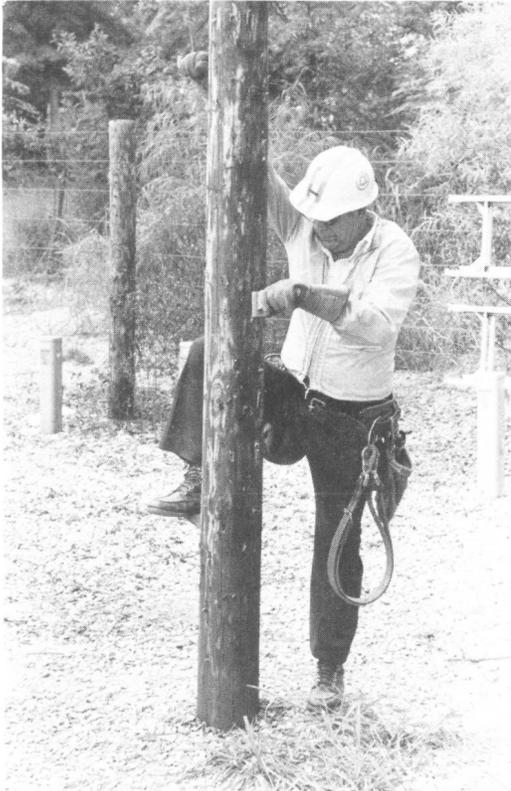


Fig. 11—Initial Foot Contact Completed

- (d) Center body weight over trailing foot (left foot in Fig. 11) on ground.

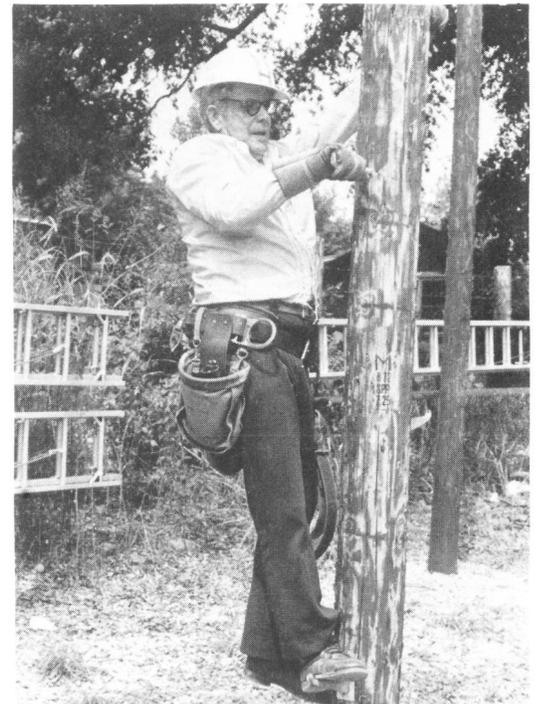


Fig. 12—Shift Body Weight

- (a) Step up, shift, and center body weight over leading foot (right foot in Fig. 12).
- (b) Raise the trailing hand (left hand in Fig. 12) and position it on the next step up (to become the leading hand).

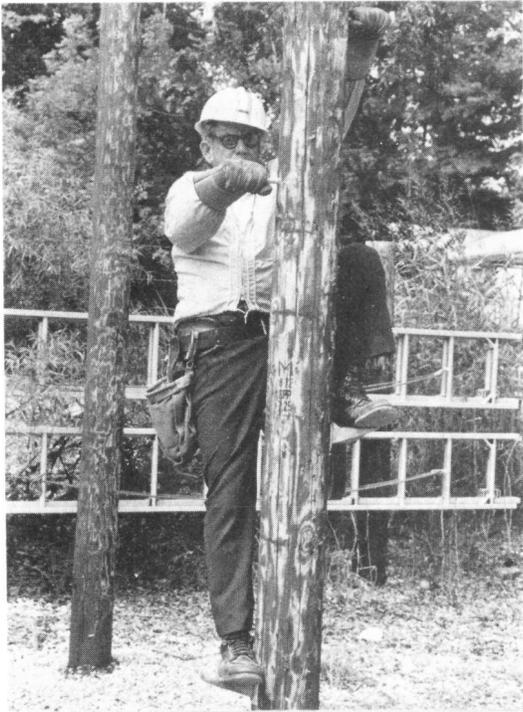


Fig. 13—Reposition the Trailing Foot

(c) Raise trailing foot (left foot in Fig. 13) and position it on the next step up (becoming the leading foot).

- Center the arch of the boot over the middle of the step.

- Lock ankle to keep foot in position.

(d) Center body balance over the trailing foot (right foot in Fig. 13).

4.07 Continuing ascent sequence: The process of shifting one's body weight, moving the trailing hand up to the next step, and repositioning the trailing foot up to the next step while maintaining body balance, as described in 4.06, is repeated until the work area is reached.

COMPLETING THE ASCENT

4.08 When the working height on the pole has been obtained, it is necessary to verify whether any hazards are present in the work area, to secure the safety strap to the pole, and to attain a comfortable working position.

4.09 Making work area inspection:



Fig. 14—Select and Inspect Location

(a) Select a safety on location relative to the work area that is free from climbing hazards and pole obstructions.

4.10 Safetying on:



Fig. 15—Safety on Hand Positions

- (a) Position the hand opposite the carrying Dee ring (right hand in Fig. 15) at shoulder height.

- The heel of hand should be on the back quarter of pole.

- Arm should be straight or slightly bent as necessary to keep upper part of body erect and parallel to pole.

- (b) Keep the opposite hand (left hand in Fig. 15) free to disengage snaphook.



Fig. 16—Disengage Top Snaphook

- (c) Remove the safety strap from the carrying Dee ring (left side Dee ring in Fig. 16).

- Position index finger of free hand (left hand in Fig. 16) on keeper.

- Position thumb of free hand on back of snaphook.

- Depress the index finger on the keeper as the thumb secures the snaphook.

- (d) Release the keeper after the snaphook is removed from the Dee ring.



Fig. 17—Transfer Snaphook Around Pole

- (e) Position hand carrying the snaphook (left hand in Fig. 17) at least shoulder high on the back quarter of the pole.

(f) Shift body balance to wrist of hand carrying the snaphook.

- (g) Transfer snaphook to fingers of the free hand (right hand in Fig. 17).



Fig. 18—Engage Snaphook on Opposite Dee Ring

- (h) Move snaphook in position to engage Dee ring (right side Dee ring in Fig. 18).
- (i) Move the hip which is opposite the weight centered side (right hip in Fig. 18) closer to the pole (approximately 1/2 the distance).
- (j) Position snaphook in Dee ring with the front side of keeper touching the inside of Dee ring.
- (k) Position fingers on back of snaphook with heel of hand on outside edge of Dee ring.

- (l) Pull the snaphook (opening keeper) and engage the snaphook on the Dee ring.

4.11 Shifting weight support:



Fig. 19—Verify Safety Strap is Engaged

- (a) Visually verify that the snaphook is properly engaged.
- (b) Check safety strap for twists.
- (c) Position the safety strap at belt height on pole.



Fig. 20—Shifting Body Weight

- (d) Use the free hand (right hand in Fig. 20) to reposition the safety strap belt high on the pole.
- (e) Grasp safety strap on the engaging Dee ring side (right side in Fig. 20) when shifting body weight.



Fig. 21—Body Weight Shifted

- (f) Shift body weight to body belt and safety strap.
- (g) Hands are free to perform work operations.

5. MANEUVERING ON STEPPED POLES

MAKING LATERAL MANEUVERS

5.01 A lateral maneuver on a stepped pole is the shifting of the body weight to one side of the pole to obtain a safe, comfortable body position to perform work operations.

5.02 Maneuvering from one side of a stepped pole to the opposite side (front to back, or back to front) is not permitted.

5.03 When work must be performed on the opposite side of a stepped pole, employees must descend the pole to the ground level and ascend on the opposite side of the pole.

5.04 Lateral maneuvering:



Fig. 22—Left Foot Positioned for Maneuver

- (a) Place inside of left foot against pole. Lock ankle with heel of foot against pole step.

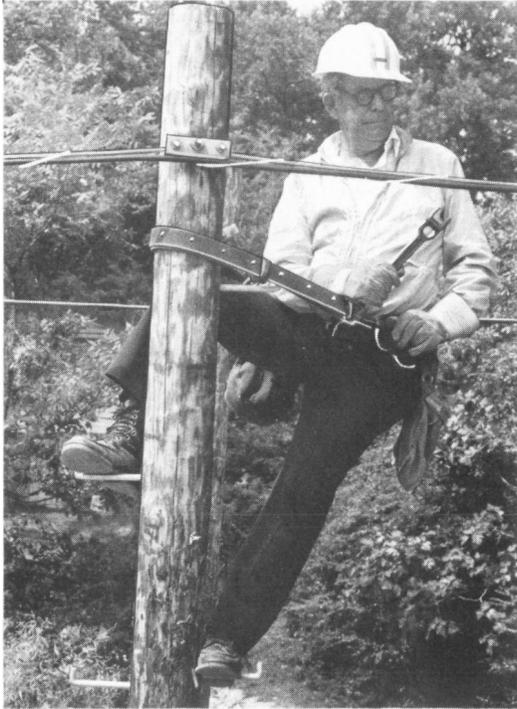


Fig. 23—Left Lateral Maneuver

- (b) Shift and center body weight over left foot.
- (c) Maintain body balance with safety strap and place right foot on opposite step or next step up on right side of pole.
- (d) Hands are free to perform work operations.
- (e) Right lateral maneuver: To accomplish a right lateral maneuver, follow the same basic principles used to move to the left of the pole, except to the opposite direction.

MAKING VERTICAL MANEUVERS

5.05 Vertical maneuvering:

- (a) Ascent: When it is necessary to ascend to a new position on a pole, the techniques illustrated and described in 4.06 and 4.07 are to be followed.
- (b) Descent: When it is necessary to descend to a lower position on the pole, the techniques illustrated and described in 6.06 and 6.07 are to be followed.

6. DESCENDING STEPPED POLES

PREPARING TO DESCEND

6.01 Prior to descending from the working position on the pole, it is necessary to verify whether any hazards are present on the pole or at the ground level, to check for proper circulation in the legs, and to restore the safety strap on the carrying Dee ring.

6.02 Making predescent visual inspection:

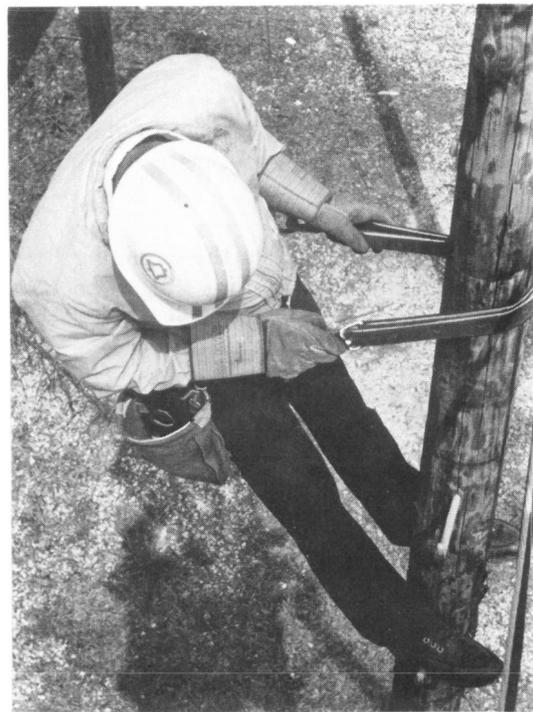
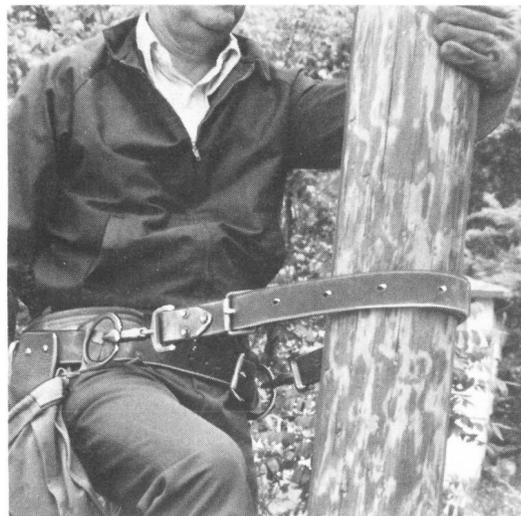


Fig. 24—Visual Inspection of Pole and Surrounding Area

- (a) Visually inspect the pole for climbing hazards.
- (b) Identify the climbing area and visually inspect it for hazards.
- (c) Visually inspect the ground for hazards.

6.03 Preparing to safety-off:**Fig. 25—Check Leg Circulation**

- (a) Check leg circulation:
 - Feet and legs—flex each limb while shifting weight to the other pole step.
 - Knees—flex or bend each knee while shifting weight to the opposite foot.
- (b) Restore circulation, as necessary.
 - Center body weight over one foot.
 - Remove the opposite foot from the pole.
 - Flex or rotate limb until circulation is restored.
 - Flex or bend the knee until circulation is restored.
- (c) Use same procedure to restore circulation to the opposite leg.

6.04 Safetying Off.**Fig. 26—Safetying Off Hand Positions**

- (a) Position the hand which is on the carrying Dee ring side (left hand in Fig. 26) at shoulder height.
 - The heel of hand should be on back quarter of pole.
 - Arm should be straight or slightly bent, keeping the upper body erect and parallel to pole.
- (b) Free opposite hand (right hand in Fig. 26) to disengage the snaphook.



Fig. 27—Disengage Snaphook

(c) Move hip opposite weight centered side (right hip in Fig. 27) closer (approximately 1/2 the distance) to the pole.

(d) Position the free hand (right hand in Fig. 27) on snaphook.

- Palm should face outward.

- Thumb should be on keeper.

(e) Depress keeper with thumb.

(f) Remove snaphook from Dee ring, and release thumb from keeper.



Fig. 28—Transfer Snaphook Around Pole

(g) Position hand carrying snaphook (right hand in Fig. 28) at shoulder height on the back quarter of pole.

(h) Shift body balance to wrist of hand carrying snaphook.



Fig. 29—Transfer Snaphook Around Pole

(i) Transfer snaphook to fingers of free hand (left hand in Fig. 29).



Fig. 30—Place Snaphook on Carrying Dee Ring

- (j) Move snaphook into position to engage carrying Dee ring (left side Dee ring in Fig. 30).
- (k) Position snaphook in Dee ring with front side of keeper touching inside edge of Dee ring.
- (l) Depress back of snaphook between index finger and thumb, opening keeper and engage snaphook on Dee ring.

MAKING THE DESCENT

6.05 A smooth descent is accomplished by shifting and centering one's body weight over the leading foot and coordinating hand and leg movement until the ground level is reached.

6.06 Beginning descent sequence:

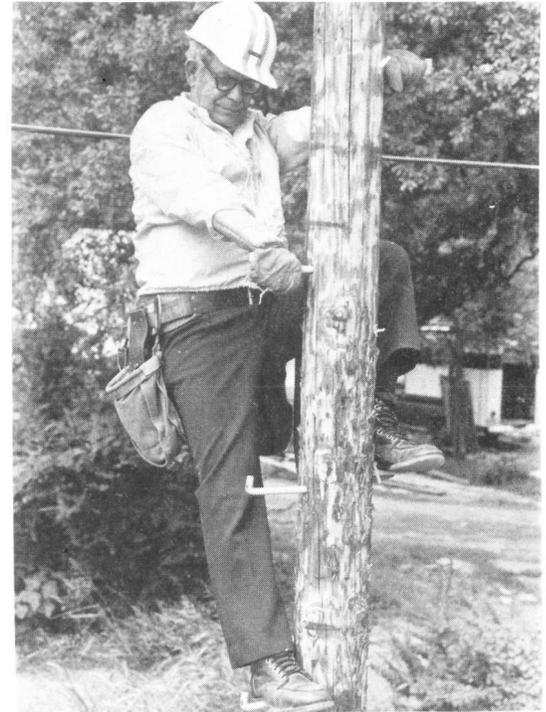


Fig. 31—Shift Body Weight

- (a) Shift and center body weight over the leading foot (right foot in Fig. 31).
- (b) Maintain body balance with leading hand (hand on weight centered side) (right hand in Fig. 31).



Fig. 32—Reposition Trailing Foot

(c) Lower and position trailing foot (left foot in Fig. 32) on the next step down (becoming the leading foot).

- Center the arch of the foot over the middle of the step.
- Lock the ankle to keep the foot in position.

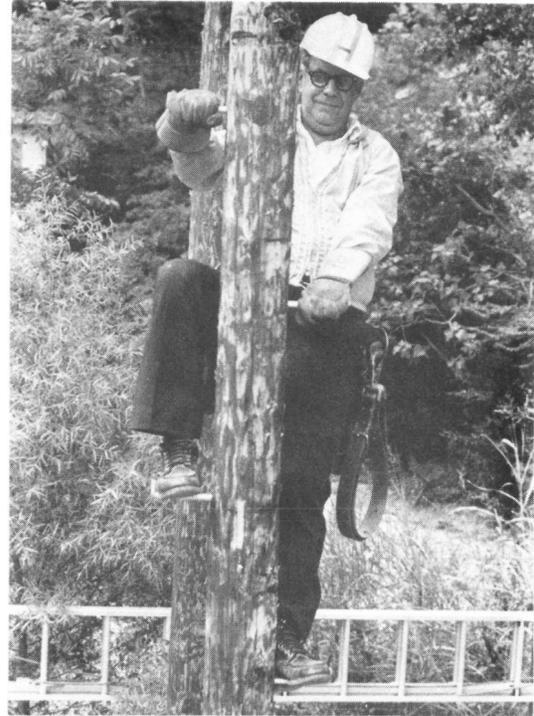
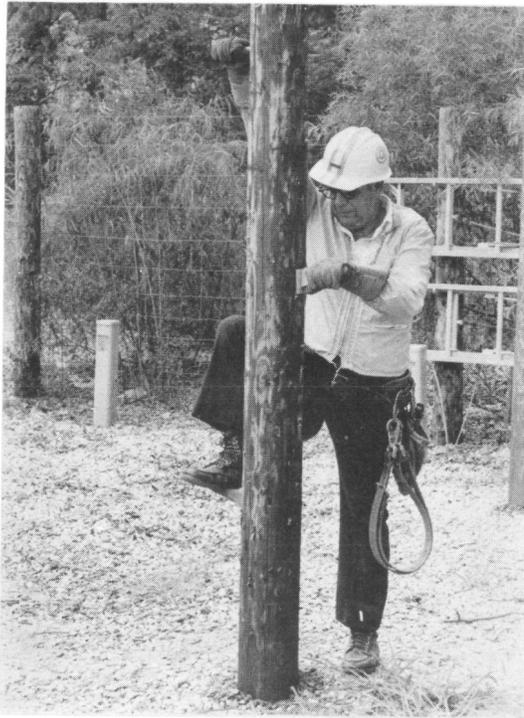


Fig. 33—Reposition Trailing Hand

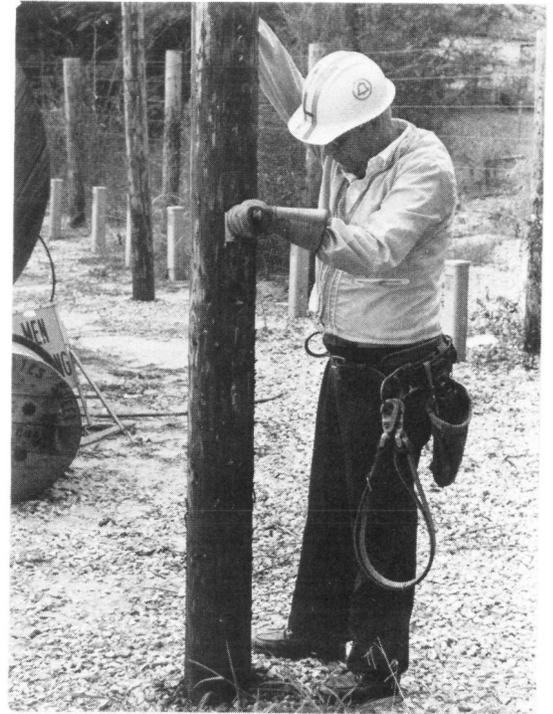
(d) Lower and position trailing hand (left hand in Fig. 33) onto next step down (becoming the leading hand).

- Palm should be down and centered over middle of pole step.
- Fingers should encircle the step with a weight supporting grip.

6.07 Continuing Descent Sequence: The process of shifting one's body weight, moving, and repositioning the trailing foot and hand to the next lower step while maintaining body balance is repeated until the step off area is reached.

COMPLETING THE DESCENT**6.08** Completing step-off maneuver:**Fig. 34—Descending Hand and Foot Positioned for Step Off**

- (a) Inspect pole and ground for hand and foot placement.
- (b) Lower descending hand (left hand in Fig. 34) and position on second detachable pole step from ground.
- (c) Lower descending foot (left foot in Fig. 34) and position it on the ground.
 - Leg should be straight, knee not locked.
 - Shift and center body weight over descending foot.

**Fig. 35—Opposite Foot Positioned for Step Off**

- (d) Inspect pole and ground for placement of opposite hand and foot.
- (e) Lower opposite foot (right foot in Fig. 35) and position on ground before removing either hand.
 - Leg should be straight, knee not locked.
 - Shift and center body weight over both feet.



Fig. 36—Opposite Hand Positioned for Step Off

(f) Lower the opposite hand (right hand in Fig. 36) and position it on the pole at shoulder height when both feet are on the ground.

6.09 Clearing pole completed:

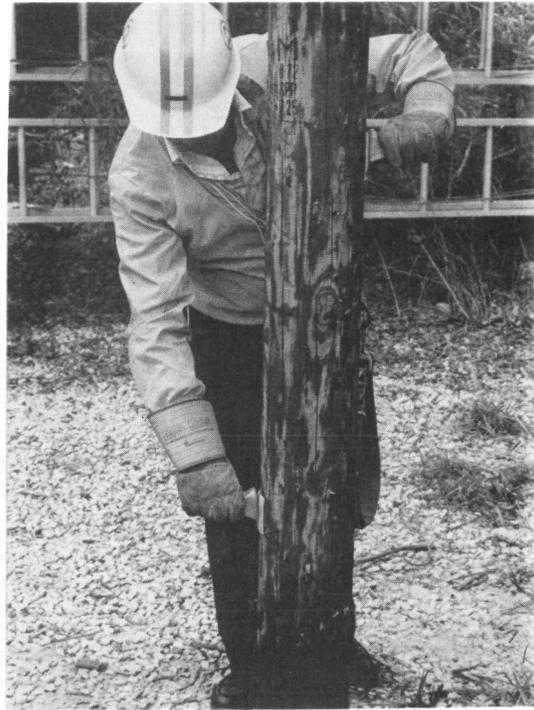


Fig. 37—Remove Lowest Detachable Pole Step

(a) Remove the lowest detachable pole step (right pole step in Fig. 37) while maintaining body balance with the opposite hand (left hand in Fig. 37).

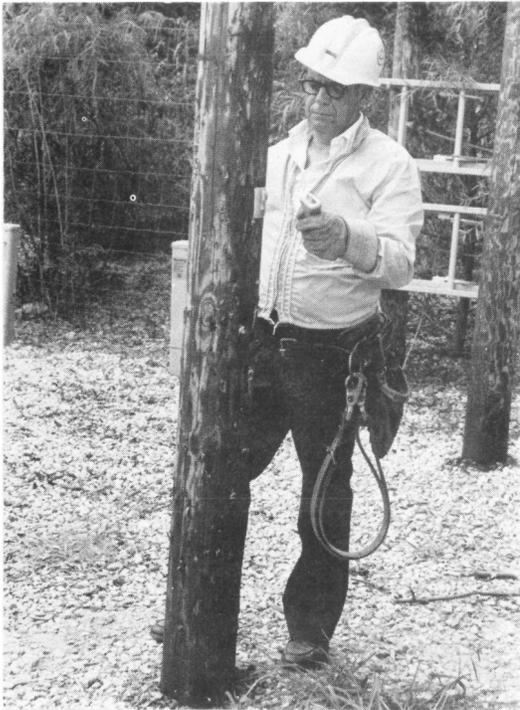


Fig. 38—Remove Other Detachable Pole Step

- (b) Remove the remaining detachable pole step (left pole step in Fig. 38) and assume a balanced standing position.
- (c) Place pole steps in storage bag.

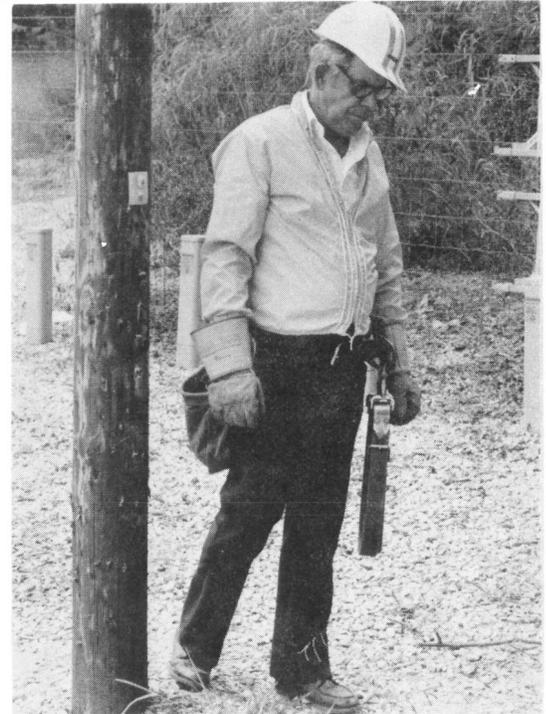


Fig. 39—Step Away From Pole

- (d) Inspect ground area for foot placement.
- (e) When clearing left, pivot on the ball of the right foot and step off with the left foot (as shown in Fig. 39).
- (f) When clearing right, pivot on the ball of the left foot and step off with the right foot.