

POLE CLIMBING

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1. GENERAL

1.01 This practice provides basic instructions for ascending and descending a pole using the **3 points of contact method**.

1.02 One of the more hazardous jobs confronting the telephone man is climbing and working on poles. This practice provides safety precautions that must be observed before, during, and after pole climbing.

2. CLIMBING EQUIPMENT

2.01 To ensure personal safety when pole climbing, it is important that proper clothing is worn and proper equipment is used. To determine proper clothing, consideration should be given to the nature of the job, the environment, and weather conditions.

2.02 Pole climbing equipment consists of a body belt, a safety strap, and a pair of climbers. This equipment allows a craftsman to climb, stand, or change position on a pole when no other means of support is available; it also allows the free use of both hands while in any position on the pole.

2.03 Body Belt:

a. The body belt consists of a cushion section, a belt section with tongue and buckle ends, a tool saddle, and D-rings which are attached solidly to the cushion; or on-shifting D-ring belts, attached solidly to a D-ring saddle. On the body belt, provision is usually made for a holster to carry one

or more tools, in addition to the tools which are carried in the tool loops. Tool loops should be of proper size to prevent the tools from slipping through the loops and falling. There should be no tool loops for 2 inches on either side of the center in the back of the body belt. Older type belts may have tool loops within 2 inches of the center of the back; **DO NOT USE THESE LOOPS.**

b. Refer to CTSP 405-601-303 and CTSP 405-601-601 for safety precautions, use and care of body belts.

c. As a general rule, the body belt is marked in "D" sizes. The "D" size is the distance between the heels of the D-rings when the belt is laid flat. See Figure 1. To obtain the correct "D" size, measure from the prominent part of the right hip bone to the prominent part of the left hip bone across the back, and add 2 inches. See Figure 2. The waist size is determined by measuring the distance between the center of the buckle roller and the middle hole on the tongue end. See Figure 3. To obtain the correct waist size, measure the distance around the body at the point where the belt will be worn. This measurement should be made outside any clothing normally worn while climbing the pole. See Figure 4. The body belt should fit snugly, but not too tightly. The end of the strap should always be passed through the keeper when the belt is being worn.

d. Manufacturers have standardized on the relationship between the "D" size and the waist size. When the waist and "D" size do not coincide with the standard sizes, the belt should be ordered by the "D" size as the waist size is adjustable.

e. Pliers shall be carried in the pocket of the tool holster farthest from the D-ring to minimize the possibility of engaging the snap of the safety strap on the plier handles instead of in the D-ring.

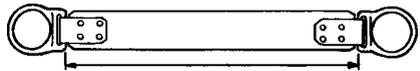


FIGURE 1. Distance Between Heels of D-Rings



FIGURE 2. Measuring for "D" Size



FIGURE 3. Distance Between Center of Buckle Roller and Middle Hole



FIGURE 4. Measuring for Waist Size

2.04 Safety Strap:

a. The safety strap is used for support while working on poles, towers, or platforms. Snap hooks are provided on each end for attachment to the D-rings in the body belt.

b. When poles are being climbed under normal conditions, both snaps should be engaged in the same D-ring for safety. The snap on the double end should have the keeper facing outward; the other snap should face inward. See Figure 5.

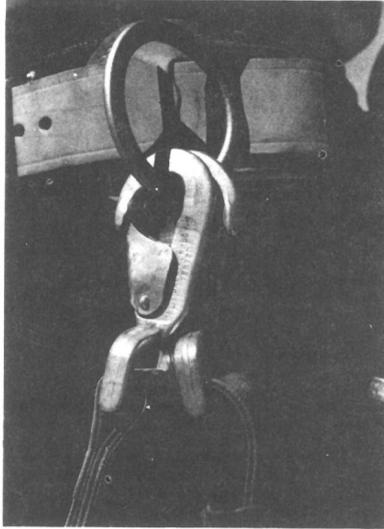


FIGURE 5.

c. When in use, one snap hook should be securely engaged in each D-ring; never both snaps in the same D-ring. The craftsman should look to be sure that snaps are properly engaged. **NEVER DEPEND ON SOUND OR FEEL FOR SECURITY.**

d. Safety straps are adjustable for length by means of a buckle in the strap to suit the craftsman and the size of the pole. When in use, the side of the strap to which the buckle is attached should be next to the pole, with the buckle tongue outward. See Figure 6.

e. The length of the safety strap should be adjusted so that the craftsman can comfortably reach his work. See Figure 7. The craftsman who uses a safety strap of the correct length can perform his work with a minimum of effort. He will be able to maintain good body balance and control of his work operations.

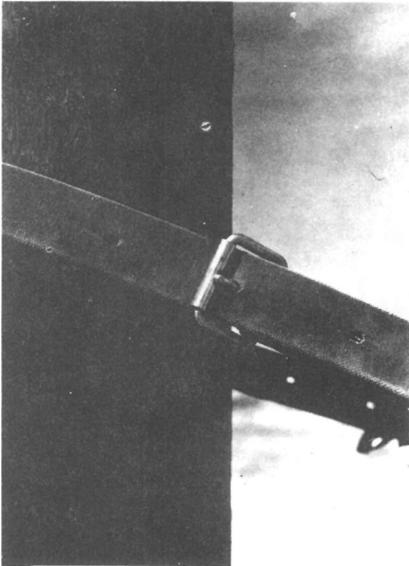


FIGURE 6.



FIGURE 7.

f. Refer to CTSP 405-601-303 and CTSP 405-601-601 for safety precautions, inspection, and maintenance of safety straps.

2.05 Climbers:

a. Climbers are used for ascending, descending, and maintaining the working position on poles when no other means of support is available. The condition, length, and shape of the gaffs of the climbers are of the utmost importance. The gaffs support the workman as he climbs, descends, and does his work.

b. Defective gaffs are dangerous. Inspection and maintenance procedures are covered in CTSP 405-601-310.

c. Climbers are made in adjustable or fixed lengths, from 14 to 21 inches by ½-inch increments. Gaff mountings are either permanent or replaceable. Proper fit requires a leg iron to reach about ½ inch below the prominence of the knee joint. Refer to CTSP 405-601-310 for correct fitting procedures.

d. Foot and leg straps are used to secure climbers to the craftsman's legs. These straps should be drawn up to a snug fit, but not so tight as to be uncomfortable. High-top shoes with heavy soles and heels should be worn for climbing. See Figure 8.



FIGURE 8.

e. The buckle on the foot strap should lie just outside the shoe lacing. Pads and straps are attached to the upper end of the leg irons. All leg and foot strap ends should be snugged down in their keepers after buckling; the strap ends should point to the rear and outside.

f. Before the leg straps are fastened, pull up the pant legs so that they bag at the knees and do not bind. Fold the pant legs snugly against the calf, toward the outside, as shown in Figure 9. This prevents the pant legs from tripping the workman while climbing.



FIGURE 9.

3. CLIMBING PRECAUTIONS

3.01 Before ascending a pole, inspect it carefully for unsafe conditions such as rake, rotted places, nails, tacks, cracks, knots, foreign attachments, pole steps, ice, etc. Remove rocks and other objects from the ground at the base of the pole.

3.02 Unauthorized attachments such as signs, radio aerials, clotheslines, etc., should be reported to the supervisor, according to local procedures.

3.03 Whenever possible, a slippery pole or one partly coated with snow or ice should be ascended with the gaffs in the slippery side and the hands held on the less slippery side.

3.04 Do not hold onto pins, crossarm braces and other hardware in ascending, descending, or changing position on a pole.

3.05 Always ascend and descend on the high side of a leaning, raked or bent pole.

3.06 Each employee should be sure that he is in good physical condition before climbing poles and should refrain from climbing poles when he feels it is not safe for him to climb and work aloft.

3.07 Arms and hands should be properly protected when climbing.

3.08 Estimate the length of the safety strap required at the working level and adjust the safety strap at the base of the pole before ascending. See Figure 10.



FIGURE 10.

3.09 Inspect the pole during ascent and descent to avoid placing gaffs in cracks, knots, holes, etc., which might cause a fall.

3.10 When ascending the pole, keep the arms and body relaxed, with the hips, shoulders, and knees a comfortable distance away from the pole.

3.11 Length of steps should be natural for each individual craftsman. Climb with the legs, using the hands and arms for balance only. Direct the gaffs toward the center (or heart) of the pole in a natural manner. The size of the pole and the length of the craftsman's legs between the hips and knees will determine the amount of gaff separation on the pole.

3.12 The effective leg stroke is that angle or stroke that will cause the gaff to cut into the pole wood without side thrust of any sort. An effective stroke results when the knee is thrown comfortably away from the pole (without straining the hip), the gaff is aimed at the target (the imaginary line down the center of the pole), and the leg force and travel are made to parallel the climber shank until proper penetration is accomplished. Kicking or slapping the gaffs against the pole should be avoided. The hands and feet should work in coordination with the weight being shifted gradually and easily from one foot to the other.

3.13 When ascending, removal of the gaffs is made easier by using a twisting action of the ankle (outward) and a slight prying action of the inside of the footwear against the pole.

3.14 Always use the body belt and safety strap when working aloft on a pole. Never place the safety strap around the top of the pole above the top crossarm or in any other place where it can accidentally slip off. If it is necessary to place the safety strap high on a bare pole, place a long through bolt in the top gain hole to keep the safety strap from slipping off the pole.

3.15 When descending, each leg is relaxed and straightened before being lowered. When the relaxed and straightened leg is "lined up" with the center of the pole and the body weight has been shifted above the gaff, drop the gaff into the pole. When descending, the leg is not stroked; it is merely lowered into position with the body weight behind it. Keep hips, shoulders, and knees away from the pole. **Do not take long steps when descending.**

3.16 When descending, the climber gaffs should break out naturally with the outward and lowering movement of the knee. Removal of the climber gaff from the pole when the last step to the ground is taken is accomplished by a slight twisting and prying action, as in ascending.

3.17 Wear climbers only when necessary for climbing or working on poles.

3.18 Do not stand at the base of a pole while a man is ascending, descending, or working aloft.

3.19 If a second man is to ascend the pole, he should wait until the first man has placed his safety strap in his working position. When descending a pole, one man should remain in his working position with his safety strap in use until the other man has reached the ground and is safely out of the way.

4. ASCENDING A POLE—3 POINTS OF CONTACT METHOD

4.01 It is important for the lineman to have good control of all his motions while aloft. This may be accomplished by using **3 points of contact** with the pole at all times. That is, both hands and one foot, one hand and both feet; or, in working position, both feet and the safety strap should always be in contact with the pole. The object of the 3 points of contact concept is to form and maintain a "tripodlike" contact with the

pole. This stance or position will resist side forces, such as wind. With the tripod effect, leverage is always available to maintain proper balance.

4.02 In ascending, the right hand leads the left foot, and the left hand leads the right foot. The right hand must be raised on the pole before the step up is made with the left foot, and vice versa with the left hand and the right foot. This will provide a balanced climbing position.

4.03 The following is the correct sequence for a craftsman taking the first step onto a pole with his right foot:

- a. Take a standing position with both feet close to the base of the pole. Place both hands on the pole. See Figure 11.



FIGURE 11.

b. Raise the right hand up the pole a distance about equal to the height of the first step that will be taken up the pole. See Figure 12. This first step should be short, about 6 to 8 inches from the ground.

c. The right foot is raised, and the gaff stroked into the pole. No body weight is placed on the right gaff at this time. See Figure 13.



FIGURE 12.



FIGURE 13.

d. The left hand is then raised up the pole a distance about equal to the natural step up the pole for the individual craftsman. The left hand controls the body side swing as the weight is lifted onto the right foot.

e. Raise the body weight to the right climber. Lift the left foot up the pole a distance equal to the normal ascending step. Stroke the left gaff in the pole; the body weight is still on the right foot. See Figure 14.

f. The right hand is then raised up the pole. The distance the hand is raised will be about equal to the natural step up the pole for the individual workman. Lift the body weight to the left gaff. The right foot is removed from the pole, raised up and stroked into the pole. See Figure 15.



FIGURE 14.



FIGURE 15.

g. With the body weight still on the left foot, the left hand is then raised up the pole. See Figure 16.

h. The body weight is raised to the right foot. The leverage to raise the body is obtained from the left hand; the side sway is controlled by the right hand. The left gaff is raised up and stroked into the pole. See Figure 17.



FIGURE 16.



FIGURE 17.

i. The sequence continues; the right hand is raised up the pole. The body weight is then raised to the left foot and the right foot is raised and stroked. The left hand is raised up the pole and the body weight is raised to the right foot.

5. DESCENDING A POLE—3 POINTS OF CONTACT METHOD

5.01 For the climber's safety, it is important that the **3 points of contact** method is used when descending a pole. When descending, the hand must be lowered on the pole before the downward step is taken; otherwise, the natural position cannot be maintained. Figures 18 through 21 show the leg, body, and arm sequence.

a. In Figure 18, the safety strap has been removed from the pole and is being stored in the left D-ring of the body belt. The feet are positioned with the left foot low; the right hand is high, holding securely to the pole.



FIGURE 18.



FIGURE 19.

b. The left hand is then placed in the high position. Next, the right hand is lowered and the right foot is moved downward. See Figure 19.

c. The left hand is then lowered a distance equal to the next downward step. In Figure 20, the next step with the left foot has just been made.

d. For the next step (shown in Figure 21), the right hand is lowered and then the right foot descends.



FIGURE 20.



FIGURE 21.

5.02 The length of the downward step is controlled by keeping both hands on the pole while the descending step is being made. With both hands on the pole during the downward step, the craftsman is able to control his body swing. The hand and foot sequence described above gives the craftsman the greatest leverage; he can control his motions with little effort and more assurance.

6. STEPPING AWAY FROM A POLE

6.01 Stepping away from a pole incorrectly can result in severe gaff wounds, as well as injuries such as broken arms and wrists, bruised hips, shoulders, and backs; other injuries may also occur when a man loses his balance and falls. Figures 22 through 27 show the safe method of stepping away from a pole.

a. Observe the ground for safe stepping space before the first foot is placed on the ground. Three points of contact with the pole are maintained during this operation. The step to the ground should be made from 6 to 8 inches up the pole. Step from the pole with one foot. See Figure 22.



FIGURE 22.

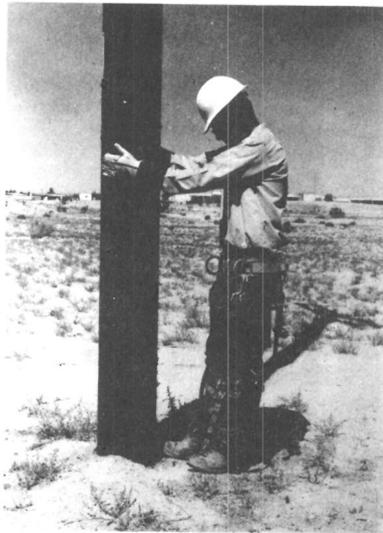


FIGURE 23.

b. Move the other foot from the pole to the ground, keeping both hands on the pole for balance and control. See Figure 23.

c. The craftsman stepping away from the pole to his left, will drop his left arm and turn his head in the direction of the step so that he can observe the ground for safe stepping space. The right hand is kept on the pole. See Figure 24.

d. When both feet are on the ground, the left foot is moved a natural step away from the pole. The body balance is controlled by keeping the right hand on the pole. See Figure 25.



FIGURE 24.



FIGURE 25.

e. When the left foot has been moved, the body weight is transferred to it and the right foot carefully moved to a natural standing position with relation to the left foot. The right hand is kept on the pole for control during this step. See Figure 26.



FIGURE 26.

f. When the move with the right foot has been safely made, remove the right hand from the pole. See Figure 27.

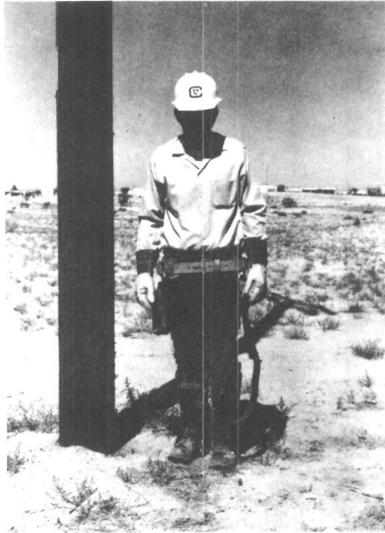


FIGURE 27.

g. Remove the climbers and replace the gaff guards on the gaffs. See Figure 28.



FIGURE 28.

NOTE: If the first step away from the pole is made to the right, the same sequence is followed except the right hand is dropped instead of the left.

6.02 The above method of stepping away from poles while wearing climbers works equally well when stepping away from stepped poles when climbers are not worn.

7. GOING AROUND A POLE

7.01 It is important that all craftsmen use the correct method of going around a pole. Figures 29 through 32 show the correct method to be used when going around a pole to the left.

NOTE: This method is reversed when going around a pole to the right.

a. The left (or lead) foot is removed from the pole and moved around to the left. It is set in the pole from 2 to 4 inches higher than the right foot (or following climber). The leg action is an ascending or stroking action toward the center or "heart" of the pole. Keep both hands on the pole while performing this operation. Figure 29 shows the position of the feet at the start of the movement to the left.

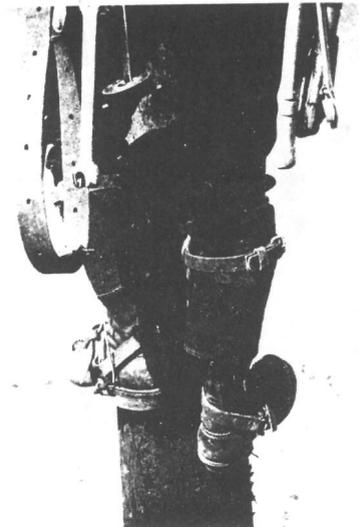


FIGURE 29.

b. Figure 30 shows the position of the feet after the lead (left) foot has been moved around and stroked into the pole. The following (right) foot has not been moved. The body weight is supported by the right foot.



FIGURE 30.

c. The body weight is raised to the left (high) climber. The right (lower) gaff is removed from the pole and moved around to the left. The gaff of the right (lower) climber is lowered into the pole with the same leg and body action used in descending a pole. That is, the leg is kept straight, the gaff aimed at the "heart" of the pole, and the body weight lowered to the gaff. The lower gaff is not stroked. Figure 31 shows the position of the feet just after the body weight has been transferred to the lower (following) gaff.



FIGURE 31.

d. The hands are shifted around the pole. The left gaff is removed and moved around the pole for the next step. Figure 32 shows the start of the second step with the lead (left) foot.

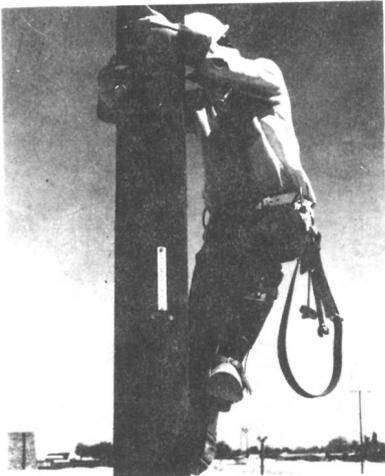


FIGURE 32.

7.02 The craftsman's body structure, wind conditions, whether the operation involves going from the high to the low (or the low to the high) side of the pole all have a bearing on the vertical separation of the gaffs. The distance that the gaffs are moved horizontally as each step is made is determined by the size of the pole, size of the craftsman's boots, wind conditions, etc. The step should be that which is most natural for the individual.

7.03 When using a safety strap for going around the pole, keep both hands on the safety strap and proceed as instructed in paragraphs 7.01 and 7.02, maneuver the safety strap with the hips.

7.04 The use of the safety strap is recommended for going around the pole. However, when circumstances require the removal of the safety strap due to obstacles such as down guys, cable extension arm braces, crossarm braces, etc., remove the safety strap and proceed as instructed in paragraphs 7.01 and 7.02.

8. WALKING WITHOUT CLIMBERS

8.01 Craftsmen shall remove their climbers when walking between poles, from a truck to a pole, etc., and at all other times except when actually climbing poles. The gaff guards shall always be on the gaffs when the climbers are being carried or stored.

8.02 The cutting edges of the gaffs will be dulled if the climbers are worn while walking. **DULL GAFFS ARE DANGEROUS TOOLS.**

8.03 Severe gaff wounds may be experienced if climbers are worn while walking. The safety strap should be placed over the shoulder while walking, particularly if walking on rough ground, through brush, on slopes, etc.

9. USE OF SAFETY STRAP

9.01 **Putting Safety Strap Around Pole:** The following sequence is for a craftsman who carries his safety strap on the left D-ring. The gaffs should be set in the pole with the right gaff higher than the left. This makes it easier to bring the right hip up to the pole and provides good "side sway" control.

a. The top safety strap snap is disengaged from the D-ring by depressing the keeper with the index finger of the left hand. The thumb backs up the snap hook as shown in Figure 33.



FIGURE 33.

b. The snap hook is removed from the D-ring. The body weight is supported with the right hand and both climbers while the snap is being disengaged. See Figure 34.

c. Pass the snap hook back of the pole toward the right hand. The snap is carried around the pole in the same position in the hand as when it was removed from the D-ring. The opening in the snap hook will be away from the pole. See Figure 35.



FIGURE 34.

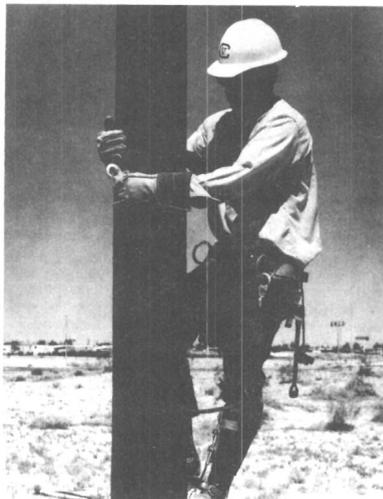


FIGURE 35.

d. The body weight is transferred from the right hand to the left hand. Do not transfer the safety strap snap to the right hand until the body weight has been shifted safely. See Figure 36.



FIGURE 36.

e. The snap is taken by the fingers of the right hand and carried around the pole to the right D-ring. See Figure 37.



FIGURE 37.

- f. The safety strap should be kept at working height by letting it slide through the fingers of the left hand as the safety strap is passed around the pole to be engaged in the right D-ring.
- g. The heel of the hand backs up the D-ring and prevents it from moving as the fingers apply pressure to the back of the snap. This hand action makes it easy for the craftsman to engage the snap. See Figure 38.



FIGURE 38.

NOTE: In the above figure, the glove has been removed so the heel of the hand and finger action may be shown more clearly. However, gloves should not be removed during actual climbing.

- h. The opening in the snap should always be outward from the body. **LOOK, SEE, KNOW** that the snap is properly engaged in the D-ring. Most craftsmen will bring the right hip closer to the pole during this operation. This makes it easier to attach the snap to the D-ring.

- i. Place the right hand on the safety strap between the pole and the right D-ring. Gradually lean back on the safety strap. Keep the left hand around the pole and the right hand on the safety strap as an added precaution until the body weight is safely supported by the safety strap and body belt. The safety strap should always be flat against the pole, with no twists in it. See Figure 39.



FIGURE 39.

j. The position of the safety strap on the pole may be readjusted once it is ensured that the snap is properly engaged.

k. The length of the safety strap can be readjusted at the working level after the craftsman has safely belted in. See Figure 40.

9.02 Removing Safety Strap from Around Pole:

a. First, the craftsman should position his gaffs so that the right gaff is higher than the left. Support the body weight with the left hand. Move the right hip toward the pole to secure slack in the safety strap. Place the right hand in position on the snap. The right elbow is up from the D-ring and away from the body. See Figure 41.



FIGURE 40.



FIGURE 41.

l. When in working position, the openings of the snap hooks must be away from the body.

NOTE: Employees who carry the safety strap on the right side of the body belt will reverse the above procedures.

m. To move up or down on a pole with the safety strap in use, hold the pole with one hand as tension is released on the strap and move the strap up or down with the other hand.

- b. Depress the keeper with the thumb. Twist the snap around as shown in Figure 42 and remove it from the D-ring.



FIGURE 42.

- c. The snap is passed around the pole to the fingers of the left hand, while the body weight is still supported by the left hand and arm.

- d. The body weight is transferred to the right hand before the left hand (carrying the snap) is removed from the pole.

- e. The snap is returned to the carrying D-ring. It is engaged on top of the keyed snap with the opening of the snap toward the body. A downward-forward motion is used to engage the snap. See Figure 43.



FIGURE 43.

NOTE: Employees who carry the safety strap on the right side will reverse the above procedures.