

PLACING DROP WIRE WHERE POWER EXPOSURE IS LESS THAN 300 VOLTS

1. GENERAL

1.01 The procedures outlined herein apply specifically to the conditions usually encountered where the drop wire *will not* cross over trolley or trolley-bus contact wires or over power wires or power cables operating at 300 volts or more. The basic principles presented in this section should also be observed in those cases where conditions necessitate a departure from the usual procedures.

1.04 Drop wire shall not be placed over secondary electric service wires if other means of installing the wire are practical.

1.05 Refer to Section 462-400-206 for the method of placing a drop wire over trolley or trolley-bus contact wires or over power wires or power cables operating at 300 volts or more. The methods of raising and lowering drop wire and replacing a drop wire by pulling the new wire into the span with the old wire as it is pulled out of the span are covered in Sections 462-800-311 and 462-800-312.

2. PRECAUTIONS

2.01 Obtain assistance before placing a drop wire over streets, highways, or elsewhere, if traffic, trees, or other conditions are such that one man cannot do the work safely.

2.02 *Insulating gloves shall be worn by all employees when performing all operations in which the handline or the drop wire may come in contact with power wires or power cables.*

2.03 The handline used for raising a drop wire under the conditions outlined in this section shall be free from metallic strands and shall preferably be dry. However, if weather conditions are such that it is impracticable to keep the handline dry, a wet handline may be used for placing drop wire over secondary electric service wires operating at less than 300 volts.

2.04 In general, one 50-foot and one 100 foot 3/8-inch handline will be needed for the operations outlined in this section and Section 462-400-206. The handlines should be served at the ends to prevent unraveling.

2.05 When it is necessary to carry a handline up a pole or ladder, secure one end of the rope to a B Handline Carrier (Fig. 1) attached to a body belt. The steel loop of the B Handline Carrier is designed to release the handline if it is placed under tension while the employee is climbing a pole or ladder. If no B Handline Carrier is available, double the end of the handline back on itself for a distance of approximately 1 foot and place this loop under the side or back of the body belt so that it will be readily released if placed under tension.

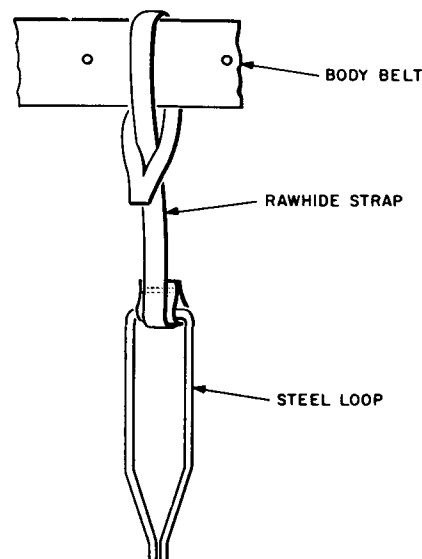


Fig. 1 — B Handline Carrier

2.06 Never release the drop wire support from a wire span while working inside the angle formed by the wire.

2.07 Avoid working from a ladder placed against a building with the side rails crossing a wire run or in any other position where movement of the wire, due to loosening of the attachments, would cause an accident.

2.08 When a drop wire is to be attached to a span clamp, place the foot of an extension ladder on the field side of the suspension strand and not in the street or highway. If there is no street or highway adjacent to the span clamp,

place the ladder preferably against the opposite side of the strand from the drop wire run to the building.

2.09 If conditions are such that the handline or the drop wire to which it is attached may become disengaged from a drive hook, crossarm, or slides along the strand or guard arm while performing the work outlined in this section, enclose the handline or drop wire with a temporary guide loop. This loop consists of a short length of wire or houseline placed over the handline or drop wire with the ends of the guide securely tied as follows:

- (a) Drive Hook: Tie one end to the vertical portion of the drive hook and lash the other end to the pole.
- (b) Crossarm: Tie the ends to adjacent pins or insulators.
- (c) Guard Arm: Tie the ends to the guard arm on each side of the handline or drop wire.
- (d) Strand: Tie the ends to the strand or the lashed cable and strand on each side of the handline or drop wire, or place the handline or drop wire through the hook of a B Span Clamp.

3. PLACING WIRE OVER STREET OR HIGHWAY — NO TREE INTERFERENCE

3.01 Where a drop wire to be placed over a street or highway will not cross over trolley or trolley-bus contact wires, power wires or power cables operating at over 300 volts, and there is no tree interference, place the wire as follows:

Caution: Before proceeding with the following operations, fasten the inner end of the coil of drop wire securely to one of the springless spokes of the drop wire reel.

- (1) Install the first building attachment and secure the drop wire to this support. Complete the building run in a standard manner. Keep the drop wire reel on the ground near

the building to avoid accidents resulting from vehicles striking the wire or pedestrians tripping on it as shown in Fig 2.

- (2) Place a handline over the strand, guard arm, drive hook, or crossarm so that both ends reach the ground, with no excess length in that portion of the handline toward the building. If practicable, the handline may be formed into a coil at one end and thrown over the strand. After the handline has been placed, tie it to the base of the pole or the lower rungs of the ladder to avoid interference with pedestrians or vehicles. If it is necessary to climb the pole or ladder to place the handline, install any drop wire support that is needed.

- (3) Roll or carry the drop wire reel from the building to the building side of the street or highway, paying out the wire along the ground with sufficient slack to ensure that the wire rests flat on the ground.

- (4) When no traffic is approaching, roll or carry the drop wire reel across the street or highway to the previously placed handline, paying out the wire so that it rests flat on the ground. If a metal or hard rubber-tired vehicle passes over the wire, carry the drop wire reel back to the building side of the highway and pull the wire from the highway. Inspect the wire for possible injury and replace any portions that are found to be damaged.

- (5) Release the handline from the base of the pole or ladder and tie a bowline knot in the end of the handline toward the building and around the drop wire at the reel as shown in Fig. 3, being careful not to raise the wire above the highway. Wind any excess length of drop wire on the reel.

- (6) Set the brake of the drop wire reel so that when the wire is raised by the handline there will be sufficient tension on the wire to enable it to be pulled up to the approximate required height in the span over the street or highway.

(7) After checking to make sure that the drop wire reel is in a stable position and that its brake is properly set, grasp the free end of the handline. When no vehicles or pedestrians are approaching, raise the drop wire as shown in Fig. 4. If it is necessary to remove excess slack from the wire span as it is being raised, pull the wire at the reel end to obtain the desired slack and wind the excess length of wire on the reel.

(8) After the drop wire has been raised to the approximate required height, lash the handline near the base of the pole or, at a span clamp, to the lower rungs of the ladder as shown in Fig. 5.

(9) Climb the pole or, if at a span clamp, the ladder, and attach the drop wire to the pole or strand in a standard manner without removing the handline from the drop wire. When attaching the drop wire to a span clamp, bear in mind that the strand is forced out of line by the ladder resting against it and make any adjustments that are necessary to avoid excessive tension in the wire span when working from the ladder and also to ensure proper sag and clearance after removal of the ladder.

(10) Remove the handline from the drop wire. Cut the wire, leaving a sufficient length to reach the terminating point, and complete the connection in a standard manner.

(11) Attach the handline and remaining drop wire to the B Handline Carrier or under the body belt as previously mentioned and carry them down the pole in this manner. **Do not drop them to the ground.**

4. PLACING WIRE OVER STREET OR HIGHWAY — TREE INTERFERENCE

4.01 Placing drop wire through trees shall be avoided whenever practicable. However, if trees cannot be avoided, the method outlined in 3.01 shall be modified as follows:

Caution: Before proceeding with the following operations, fasten the inner end of the coil of drop wire securely to one of the springless spokes of the drop wire reel.

(a) Procedure where tree is located on the same side of the street or highway as the building.

(1) Place the drop wire reel on the side of the tree toward the pole line. If the tree overhangs the street, the reel shall not be placed in the street unless it is properly guarded by means of a telephone company truck or something equivalent.

(2) Place the handline among the branches of the tree in the desired location for the drop wire, and pull the wire into position among the branches. A wire raising tool may be used to facilitate this operation.

Caution: The handline and drop wire shall not overhang the street unless they are properly guarded. If practicable, park the telephone company truck so that it will shield the handline and the drop wire.

(3) Attach the drop wire to the building, as covered in 3.01(1), making sure that the wire rests flat on the ground between the tree and the building.

(4) Complete the wire run to the pole or to the span clamp as covered in 3.01(2) to (10) inclusive.

(b) Procedure where tree is located in the immediate vicinity of the pole or span clamp.

(1) When placing the handline over the strand, guard arm, drive hook, or cross-arm, locate it among the branches of the tree as illustrated in Fig. 6 in order that the drop wire may be raised to the proper position. A wire raising tool may be used to facilitate this operation. After the handline has been placed, tie it to the base of the pole or the lower rungs of the ladder to avoid interference with pedestrians or vehicles.

Caution: The handline shall not overhang the street unless it is properly guarded. If practicable, park the telephone company truck so that it will shield the handline.

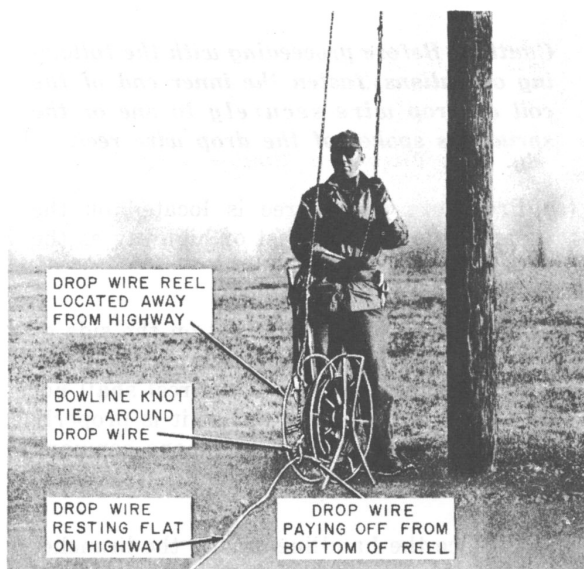


Fig. 3 — Bowline Knot Placed Around Drop Wire

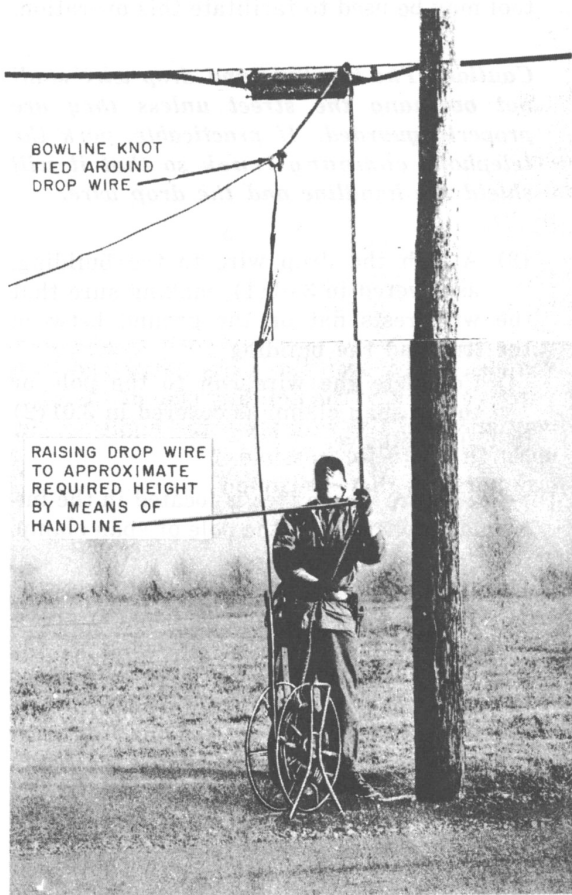


Fig. 4 — Raising Drop Wire

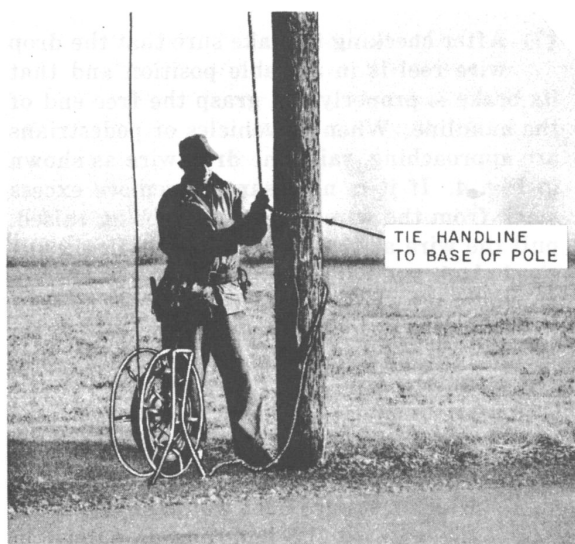


Fig. 5 — Drop Wire Raised to Approximate Height

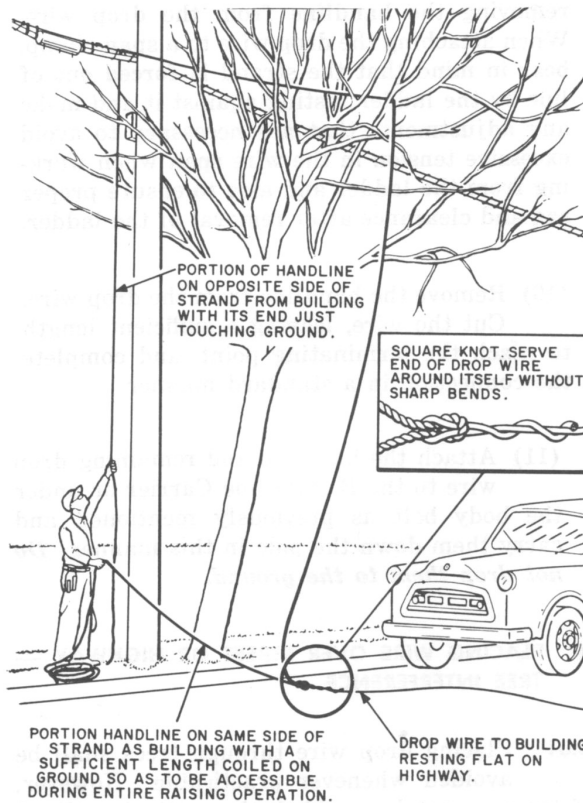


Fig. 6 — Drop Wire Tied to Handline

(2) Proceed as covered in 3.01 or 4.01 (a)

(1), (2), (4), depending on the conditions, except that the wire shall be raised at the pole or strand end of the span as follows:

a. With the drop wire crossing the street and resting flat on the ground, remove sufficient wire from the drop wire reel to reach the terminating point and cut the wire.

b. Tie the end of the drop wire to the handline as shown in Fig. 6 at a point in that portion of the handline toward the building which will permit access to both ends of the handline from his position on the ground during the entire raising operation.

Note: If the handline has been placed over a drive hook or other support on which a square knot would snag, fasten the wire to the handline as shown in Fig. 7.

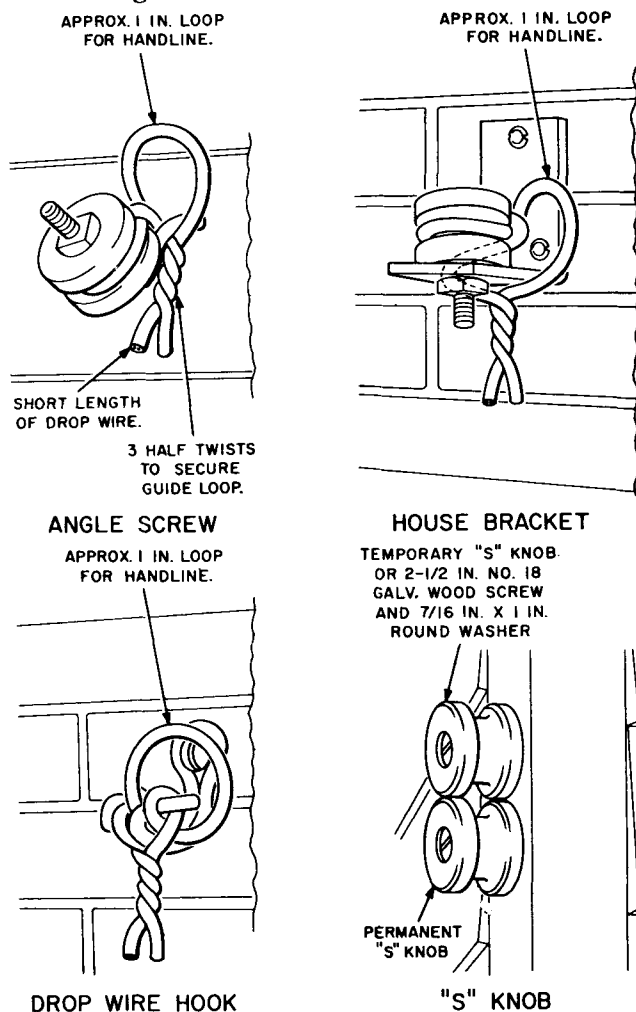


Fig. 9 — Temporary Guide Loop

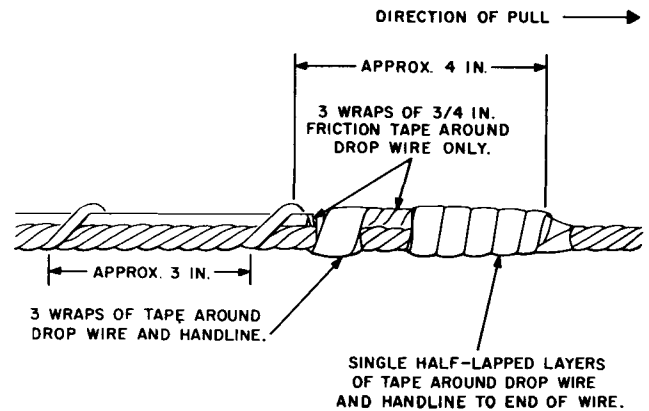


Fig. 7 — Alternate Tie to Prevent Snagging

c. When no vehicles or pedestrians are approaching, raise the drop wire by pulling that portion of the handline on the opposite side of the strand from the building. The portion of the handline toward the building should pass through employee's hand as shown in Fig. 8 in order that he may be able to pull the handline in either direction to work the drop wire among the branches of the tree or to pull the wire to the ground quickly if necessary.

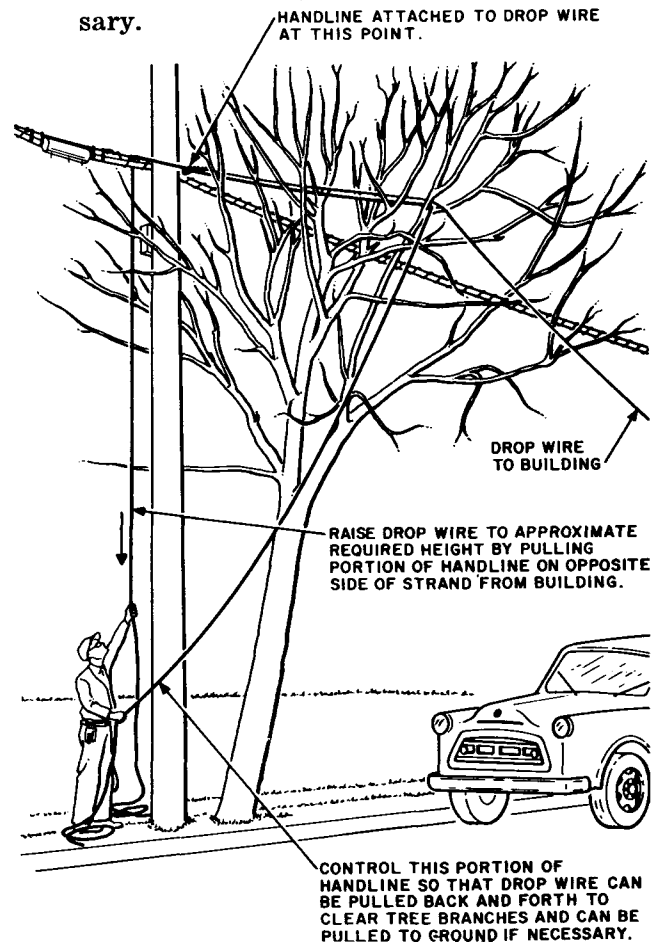


Fig. 8 — Raising Drop Wire

d. After the drop wire has been raised to the approximate required height, tie the handline to the base of the pole, or, if at a span clamp, to the lower rungs of the ladder and proceed as outlined in 3.01(9) and (10).

5. PLACING WIRE OTHER THAN OVER STREET OR HIGHWAY

5.01 When placing a drop wire other than over a street or highway, follow the methods outlined in 3. or 4. if these procedures are necessary in order to raise the wire safely, such as when spanning from one building to another. Otherwise, place the wire as follows:

Caution: *Before proceeding with the following operations, fasten the inner end of the coil of drop wire securely to one of the springless spokes of the drop wire reel.*

(1) Install the first building attachment and complete the wire run on the building, keeping the drop wire reel near the building to prevent accidents resulting from vehicles striking the wire or pedestrians tripping on it.

Note: If obstructions are encountered between the building and the pole or span clamp, locate the drop wire reel on the pole line side of the obstruction; place the wire over or through the obstruction, and then attach the wire to the building, making sure that the wire rests flat on the ground between the obstruction and the building.

(2) Roll or carry the drop wire reel from the building to the pole or span clamp location, paying out the wire so that it rests flat on the ground.

(3) Tie a bowline knot in one end of the handline around the drop wire at the reel. The length of the handline shall be greater than the distance from the ground to the drop wire attachment point.

(4) Set the brake of the drop wire reel so that when the wire is raised by the handline there will be sufficient tension in the wire to enable it to be pulled to the approximate required height in the span.

(5) Loop the other end of the handline to a B Handline Carrier or under the body belt as described in 2.05 and climb the pole or, if at a span clamp, the ladder.

(6) Place the handline over the strand, guard arm, drive hook, or crossarm from the side toward the building.

(7) Raise the drop wire to the approximate required height by pulling the handline over the strand or other support and then lash the handline to the pole or strand.

(8) Attach the drop wire to the pole or strand in a standard manner without removing the handline. When attaching the drop wire to a span clamp, bear in mind that the suspension strand is forced out of line by the ladder resting against it. Make any adjustments that are necessary to avoid excessive tension in the wire span when working from the ladder and also to ensure proper sag and clearance after removal of the ladder.

(9) Remove the handline from the drop wire. Cut the wire, leaving a sufficient length to reach the terminating point, and complete the connection in a standard manner.

5.02 Place a drop wire between two buildings in the same manner as for a pole-to-building run, providing as much sag as practicable in the wire span. A temporary guide loop, such as shown in Fig. 9, should be installed on the first building attachment at which the wire span is to be raised, to prevent accidental disengagement of the handline from the building attachment. Support the tension in the wire by lashing the handline, which was used in raising the wire, to a substantial and secure support near the base of the building and then install the second drop wire clamp of the span.