PLACING CROSSARMS

GENERAL

Contents

1. GENERAL

1.01 This section contains only the general information regarding the placing of crossarms.

1.02 The methods described in these sections apply generally to all of the standard types of crossarms, except where otherwise specified. For simplicity, the illustrations, in some cases, show only one of the types of arms that could be employed under similar conditions.

1.03 For convenience of reference, those crossarms placed in the normal manner in straight sections of line are designated line crossarms. Likewise, arms in other types of construction are designated as dead-end crossarms, double crossarms, reverse (buck) arms, extension fixture arms, H fixture arms, etc.

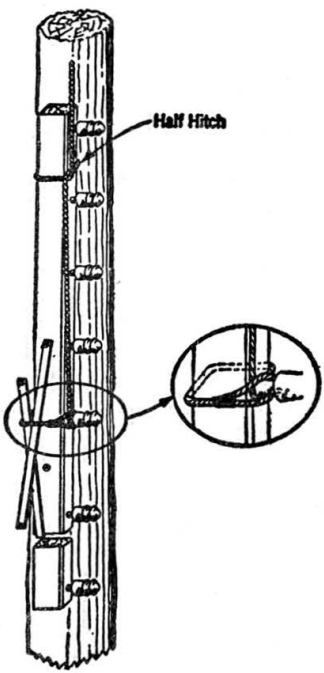
1.04 Various limitations in the use of crossarms are established by span length, loading area, corner pull, etc.

1.05 See Section G10.906 covering the use of corrosion-resistant "CR" line hardware in highly corrosive locations such as are encountered along the coast.

2. RAISING CROSSARMS

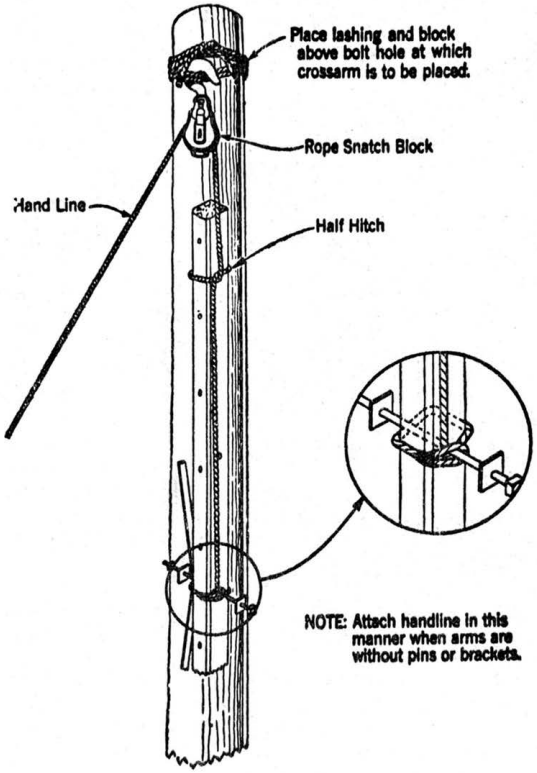
2.01 It is desirable that crossarms, equipped with such pins or B dead-end brackets as are required immediately, be attached to poles before the poles are set; it is also desirable to equip the arms with glass and such transposition brackets as are required immediately.

2.02 A hand-line secured to crossarms as shown below shall be used for raising crossarms which are to be attached to standing poles.



Inspect arm before raising to insure that pins and insulators are securely fastened and nuts on brace bolts are tight enough to hold braces from shifting.

2.03 If a helper is available, raise the crossarms from the ground as illustrated; otherwise, attach a hand-line to the crossarm before climbing the pole, and haul the crossarm up after getting in position on the pole.



3. PLACING LINE CROSSARMS

3.01 In general, attach line crossarms to poles as outlined below:

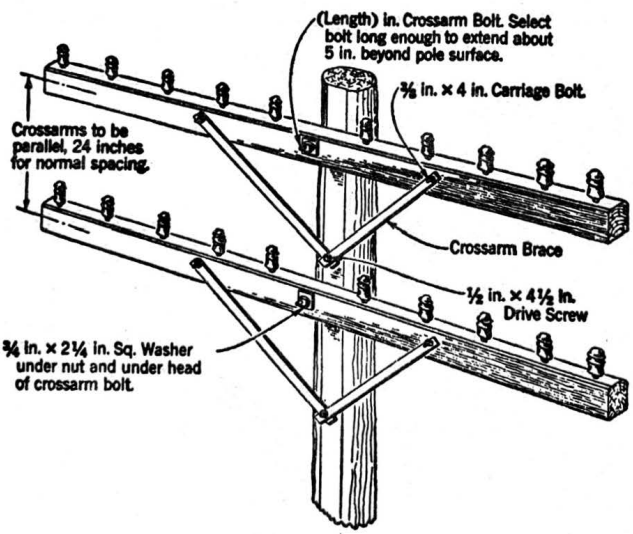
(1) Select a crossarm bolt which will extend about 5 inches beyond pole surface.

(2) Place a 3/4-inch x 2-1/4-inch square washer on bolt and drive bolt through hole from back of pole.

(3) Place crossarm on bolt with braces away from the pole.

(4) Place a 3/4-inch x 2-1/4-inch square washer over projecting end of bolt. Turn the nut firmly into place with wrench.

(5) If bolt extends more than 2 inches beyond nut, cut it off approximately 1/2 inch from outside of nut; remove any remaining burrs or sharp edges.



(6) Line up crossarm at right angles to the axis of the pole. This may be accomplished as follows:

(a) If pole is on the ground, place short leg of a steel square on bottom side of crossarm so the outer edge of the long leg points along the center line of the pole toward the butt. Place a nail or mark center line of pole at a point about 6 feet from the butt. Move crossarm until long leg of square points toward mark.

(b) If pole is erected, line up crossarm by sighting from the ground or from adjacent pole.

(7) Bring lower ends of crossarm braces together so that holes register. Attach braces to pole with a 1/2-inch x 4-1/2-inch drive screw. In the case of small poles, where a 1/2-inch x 4-1/2-inch drive screw would tend to split the pole or break out the back of it, a 3/8-inch x 4-inch drive screw may be used for attaching braces.

Note: Where a check or a soft spot in the pole may prevent the braces from holding the crossarm securely in place, use two drive screws one for each brace, or one 1/2-inch galvanized machine bolt instead of the single drive screw.

(8) Place additional crossarms parallel to the existing arms.

4. METAL POLE GAINS

4.01 Metal pole gains may be used to avoid cutting new gains in standing poles. Install metal pole gains as follows:

Note: Metal pole gains shall not be used on jointly used poles carrying aerial cable unless 1-1/2-inch clearance can be maintained between the metal pole gain and the cable suspension strand including its associated hardware and cable. This 1-1/2-inch clearance is also required between metal pole gains and foreign attachments as covered by B.S.P. G10.301-S.

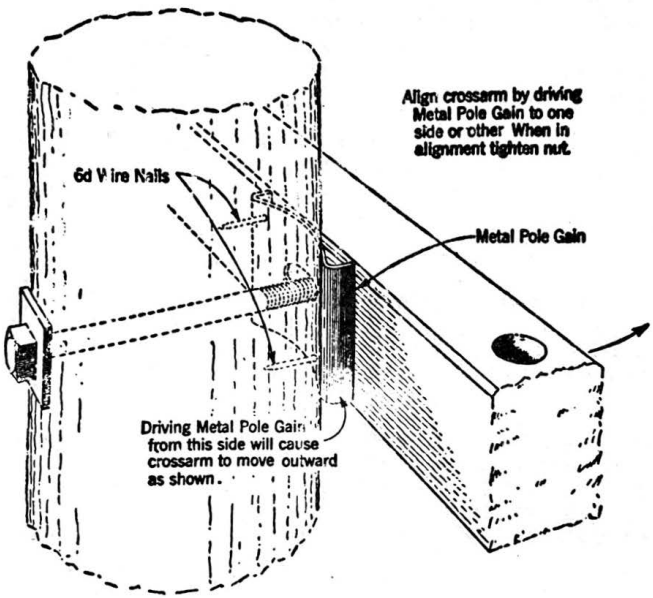
(1) Place crossarm bolt through pole in usual manner.

(2) Place and adjust metal pole gain so that crossarm will have proper alignment.

(3) Place 6d wire nails to hold metal pole gain in position.

(4) Final adjustments in the alignment of the metal pole gain may be made by striking the gain with a lineman's hammer.

Use of the metal pole gain is illustrated as follows:



5. PLACING DOUBLE CROSSARMS

5.01 Place double crossarms at the following locations.

(a) Railroad crossings other than street railways.

(b) Storm head guyed poles in heavy and medium loading areas where the wires are 104 or larger.

(c) Poles supporting spans, the length of which exceeds the average span length by the following percentages.

Average Span Length (Feet)	Per Cent. Increase in Average Span Length (Loading Areas)		
	Heavy	Medium	Light
100-300	50	50	50
301-400	40	50	50
401-500	20	30	40
501-600	5	10	20

5.02 The use of double crossarms at dead-ends, corners and in grade construction is covered in other sections of the practices.

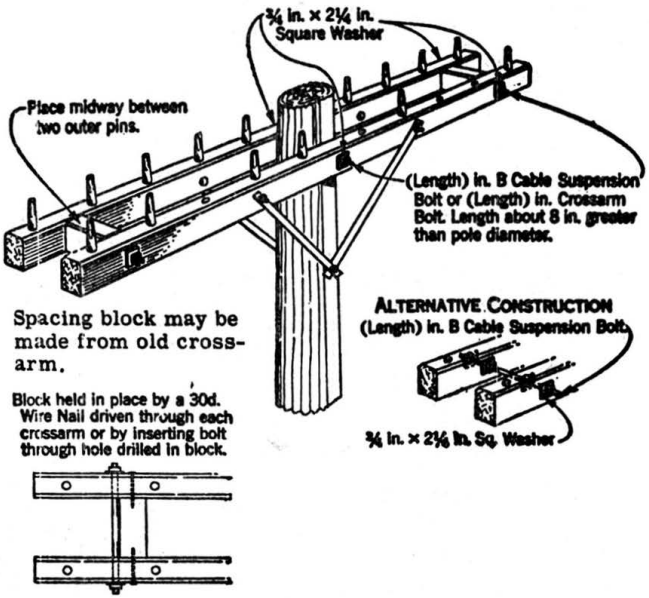
5.03 Attach double crossarms as outlined below.

(1) Select B cable suspension bolt or crossarm bolt approximately 8 inches greater than pole diameter at bolt hole.

(2) Place a 3/4-inch x 2-1/4-inch square washer against head or nut of bolt and drive bolt through crossarm. Drive bolt carrying crossarm through bolt hole from gained side of pole.

(3) Place second crossarm on projecting end of through bolt. Place 3/4-inch x 2-1/4-inch square washer on bolt. Place and tighten nut.

(4) At locations other than dead-ends complete placing double crossarm as illustrated below.



(5) Complete placing double crossarms at dead-ends as illustrated in other sections of this series.