BELL SYSTEM PRACTICES
Outside Plant Construction and Maintenance

SECTION G23.105.1
Issue 1, December, 1949
AT&T Co Standard

GUYING
DEFINITIONS

Contents **Page**

1. General 1
2. Lead and Height 2
3. Pull 3
4. Types of Guys 7

1. GENERAL

1.01 This section defines **lead, height,** and **pull,** as applied to the guying of poles and stubs. It replaces Section G23.105, Issue 1, and includes information relating to the use of the B Pull Finder.

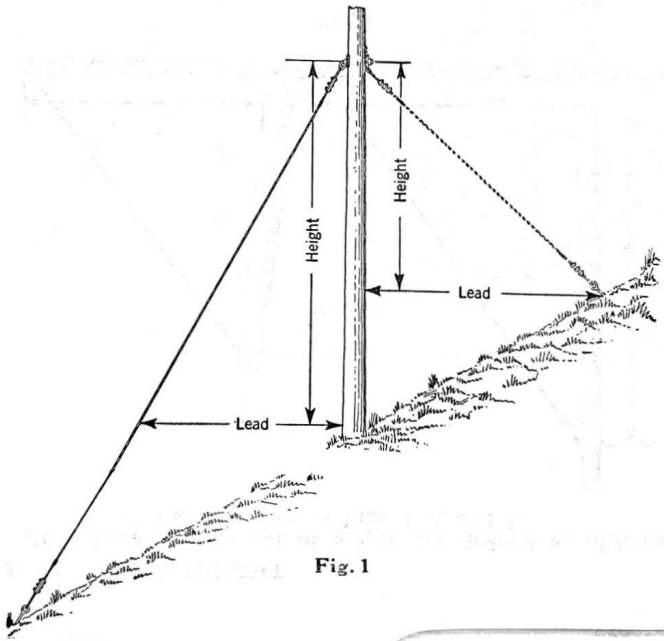

Fig. 1

2. LEAD AND HEIGHT

2.01 Lead and Height of a guy are defined as distances measured as shown in Figs. 1, 2, and 3.

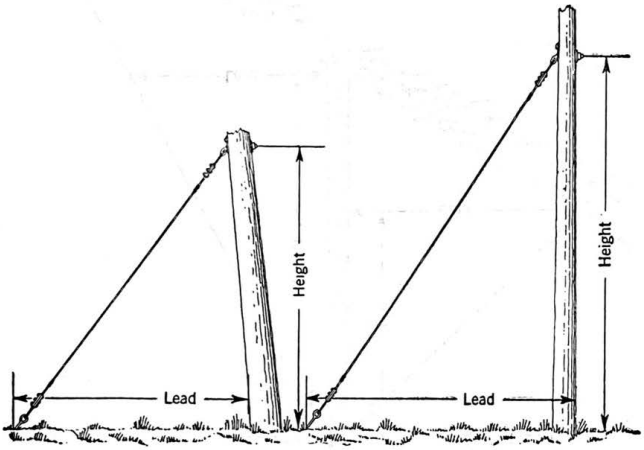

Fig. 2

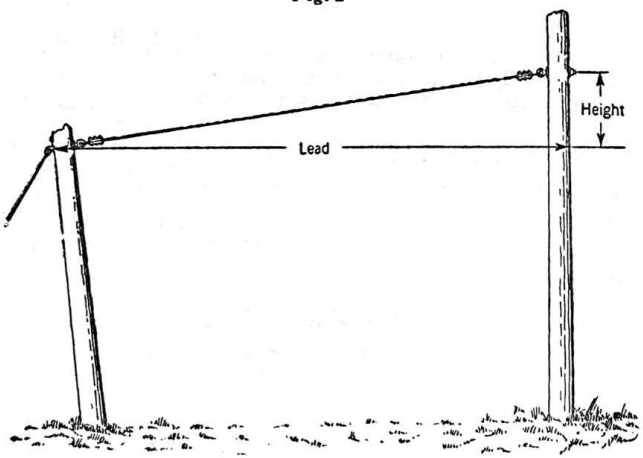

Fig. 3

3. PULL

3.01 Pull at a corner pole is defined as the distance in feet measured as shown in Figs. 4 and 5.

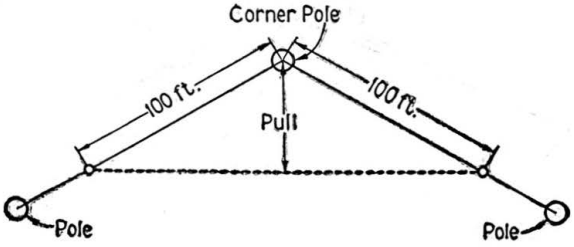

Fig. 4

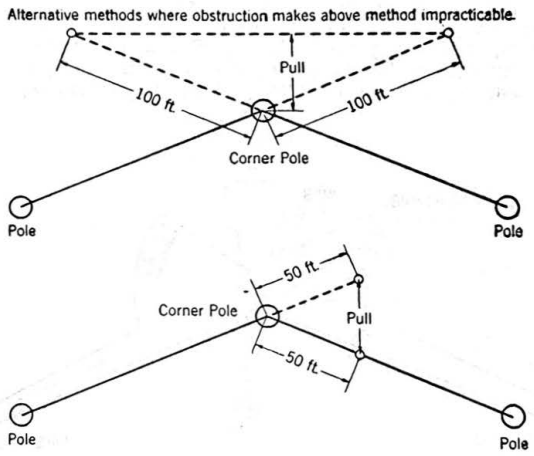

Fig. 5

3.02 Figs. 4 and 5 serve merely to define pull at a corner pole; in general, it will be more convenient to measure pull with the B Pull Finder shown in Fig. 6.

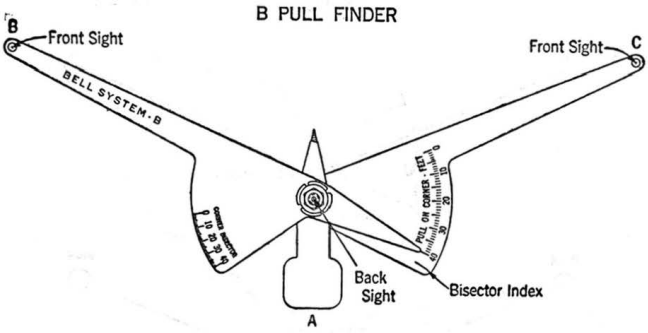

Fig. 6

3.03 To determine the pull at a corner pole by use of the B Pull Finder, screw the short leg A into the corner pole, as illustrated in Fig. 7. Adjust leg C so that the line of sight, when sighting over the back sight and the front sight on leg C, is tangent to the surface of the pole adjacent to the corner, as illustrated. In a similar manner, line up leg B, sighting on the other pole adjacent to the corner. Check leg C to make certain it has not been moved. The pointer on leg B now indicates, on the scale on leg C, the pull in feet at the corner.

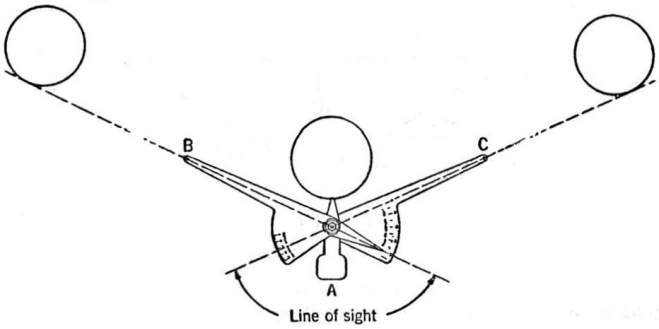

Fig. 7

3.04 The following table expresses the pull at a corner in terms of degrees and the resultant load in per cent. of the load existing at a dead-end.

Pull (Feet)	Interior Corner Angle (Degrees)	Resultant Force (Per cent. of Load at Dead-End)
10	169	20
20	157	40
30	145	60
40	133	80
50	120	100

It will be noted that the load on a corner pole at which there is a 30-foot pull is 60 per cent. of that at a dead-end pole; at a corner at which the pull is 50 feet, the load on the pole equals that at a dead-end, etc.

3.05 Measurements made as indicated in Fig. 8 will locate the bisector of the corner angle when locating anchors or guy stubs.

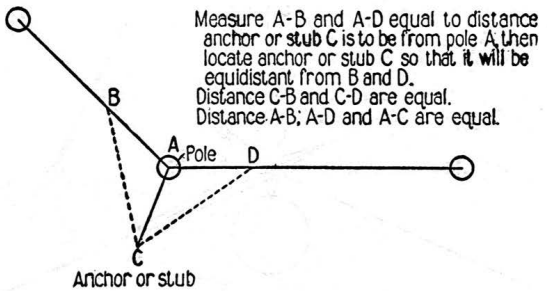

Fig. 8

3.06 The B Pull Finder may also be used for bisecting corner angles. To do this, proceed as follows:

(1) Mount the pull finder on the corner pole and measure the pull in feet, as described in Paragraph 3.03.

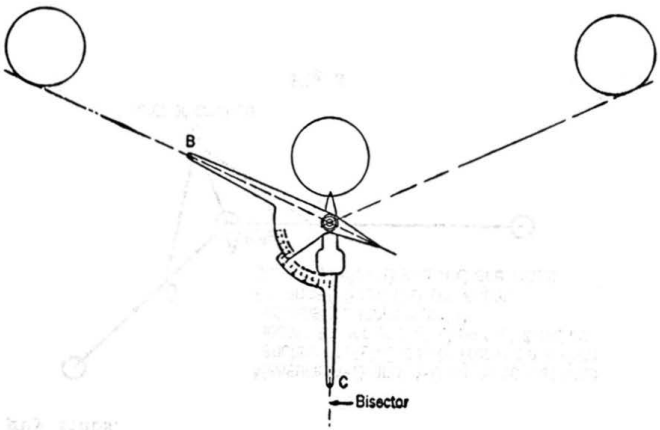

Fig. 9

(2) Without disturbing the leg B swing leg C away from the pole until the bisector index (located just beyond the 40-foot mark on the pull scale) points to the pull reading (obtained in (1) above) as read on the corner bisector scale on leg B. (See Fig. 9)

(3) Leg C is now in line with the bisector of the corner angle and the anchor or guy stub should be located in line with the back sight and the front sight on leg C. If the anchor or guy stub location is so far away that the sights on the pull finder can not be observed accurately, place a digging bar or a ranging rod on the bisector line, a few feet away from the pole where the pull finder sights may be easily observed. The anchor or stub may then be located in line with this marker and the corner pole.

4. TYPES OF GUYS

4.01 The following are definitions and illustrations of various types of guys.

(a) A side guy is defined as a guy placed in a direction transverse to the line of the lead which it supports.

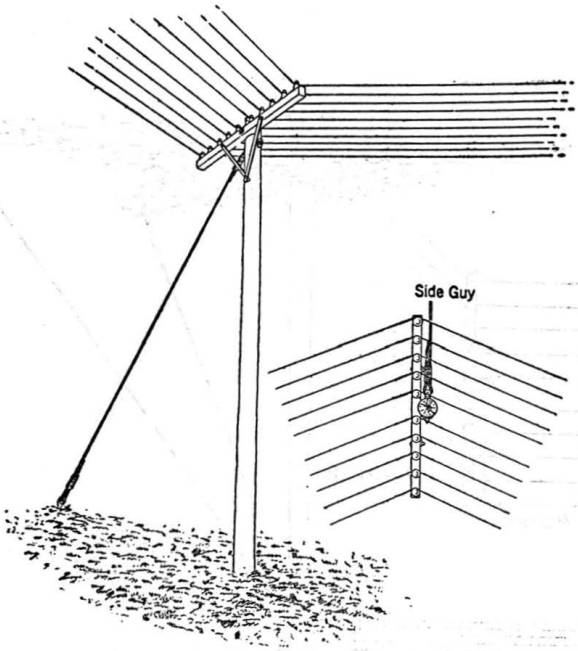

Fig. 10

(b) A head guy is defined as a guy which is placed in a line with the lead which it supports.

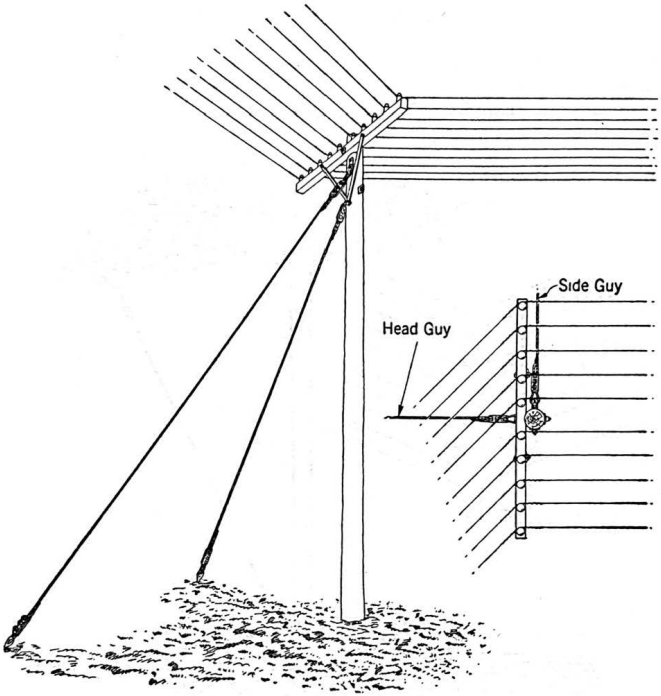

Fig. 11

(c) An anchor guy is a guy extending directly from a pole or guy stub to an anchorage in the ground.

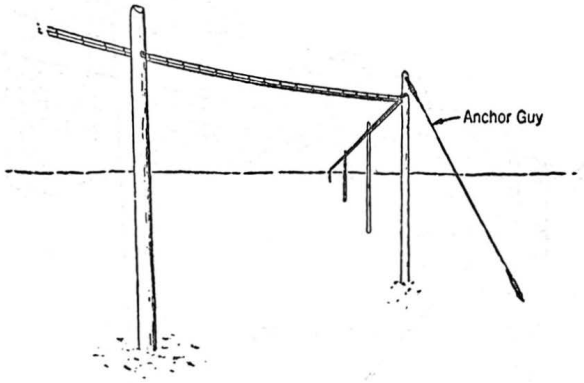

Fig. 12

(d) A pole to stub guy is used for transferring the load supported by a pole to a guy stub.

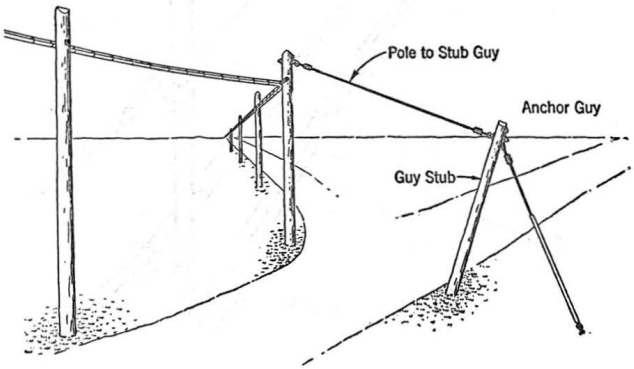

Fig. 13

(e) A pole to pole guy is a guy used for transferring the load supported by a pole to another pole.

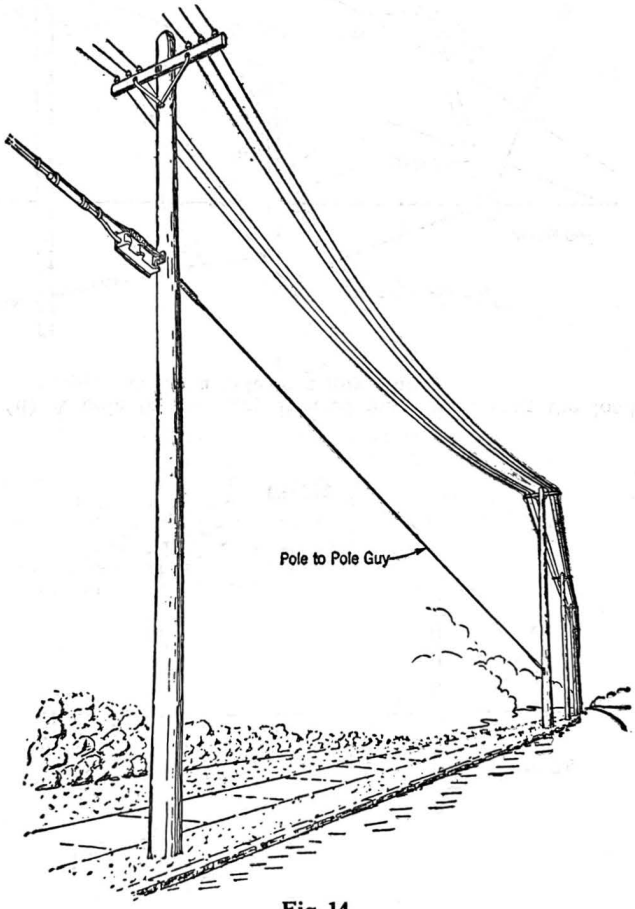

Fig. 14

(f) Storm guys are guys placed for the purpose of stabilizing the line, particularly during the period of storm loading. Under normal conditions, these guys do not contribute materially to the support of the lead. Generally, storm guys consist of two opposing side guys or a similar arrangement of guys supplemented by two opposing head guys. These are known as "two way" and "four way" storm guys, respectively. Anchor guys, pole to stub guys, or pole to pole guys may serve as storm guys. Push braces, push and pull braces or H fixtures can also be employed.

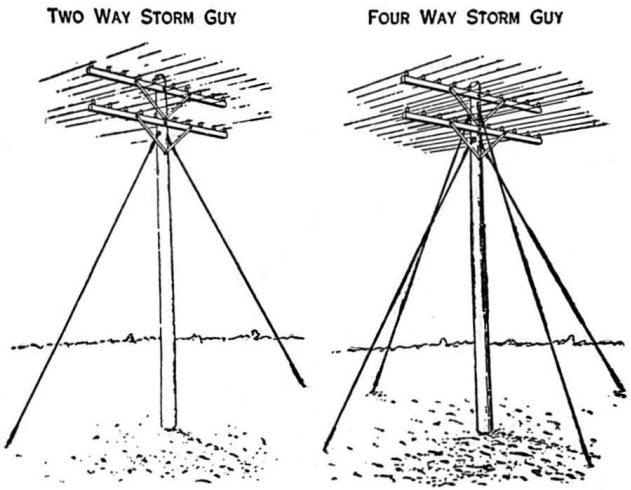

Fig. 15