

GUYING
USE OF GUY RULE
SIZES OF GUYS

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**Reprinted to comply with modified final judgment.

TABLE A
SIZES OF HEAD GUYS

SIZE OF SUSPENSION STRAND	LEAD/HEIGHT (Note 1)								
	1/5	1/4	3/10	1/3	2/5	1/2	3/5	2/3	3/4
	SIZE OF GUY REQUIRED (IN POUNDS) (Note 2)								
6M	32M	25M	22M	20M	20M	16M	12M	12M	6
6.6M	32M	25M	22M	20M	20M	16M	12M	12M	6.6
10M	60M	42M	36M	32M	30M	25M	20M	20M	10
16M	90M	70M	60M	60M	48M	42M	32M	30M	16

Note 1: Where lead/height is from 4/5 to 1-1/2, guy strand can be same size as suspension strand.

Note 2: M indicates 1000.

2.03 The letter M on the guy rule indicates thousand; for example, 6M means 6000 pounds and 10M means 10,000 pounds.

2.04 Where a 26M guy is indicated, place a 25M guy or a combination of 2 guys consisting of a 16M and a 10M guy. When the guying indicated is *not* a standard size of strand, place the *next higher* standard size of strand or a combination of standard sizes of strand whose sum is *not less than* the total guying required.

2.05 When the suspension load to be guyed exceeds the maximum shown on the guy rule, install twice the amount of guying required for one-half the suspension load. For example, if the suspension load to be guyed is 64,000 pounds, determine the guying for 32,000 pounds and place twice the guying required for the 32,000-pound suspension load.

2.06 The NUMBER OF WIRES shown in the inner scale of the small disc is the number of 104-type copper wires or their equivalent. Wire equivalents for bare wires other than 104-type copper are listed in Section 621-410-212. Wire equivalents for insulated wires are listed in Section 621-400-015.

2.07 In the case of open wire lines on pole crossarms, the minimum number of wires to be guyed will be considered as ten.

2.08 In the case of wires on pole brackets and insulated line wires, when the number of equivalent wires to be guyed is less than ten, the size of guy required will be the same as that used for 10 wires.

2.09 "PULL" ON POLE IN FEET shown on the outer scale of the large disc and "LEAD" IN FEET/ "HEIGHT" IN FEET shown on the outer scale of the small disc are measured as described in Section 621-400-011.

3. DETERMINING SIZE OF STRAND FOR SIDE GUY—CABLE ONLY

3.01 Proceed as follows:

- (1) Measure LEAD and HEIGHT of guy in feet.
- (2) Write lead over height in form of a fraction as LEAD/HEIGHT $20/22 =$ about 1, meaning that lead of guy in feet is equal to or about equal to the height of same guy in feet.
- (3) The LEAD/HEIGHT can be determined on the back of the rule by setting "LEAD" in feet opposite "HEIGHT" in feet and read ratio opposite arrow marked READ RATIO HERE (Fig. 1).

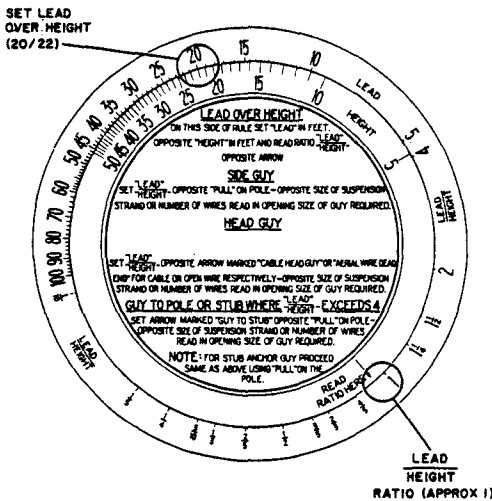
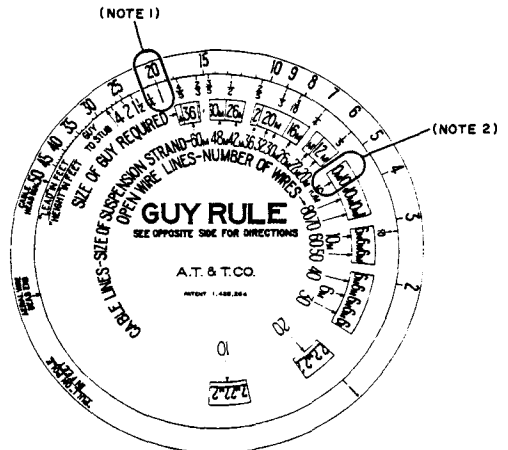


Fig. 1—Guy Rule Used to Determine LEAD/HEIGHT Ratio

- (4) Measure pull on pole in feet.
- (5) Set "LEAD" IN FEET/ "HEIGHT" IN FEET of guy shown on outer scale of smaller disc opposite "PULL" ON POLE IN FEET shown on outer scale of larger disc.
- (6) Opposite the SIZE OF SUSPENSION STRAND carried on pole shown on the inner scale of the small disc, read in opening, SIZE OF GUY REQUIRED (Fig. 2).



NOTES:

1. SET "LEAD" IN FEET OPPOSITE "HEIGHT" IN FEET
2. OPPOSITE SIZE OF SUSPENSION STRAND CARRIED ON POLE (16M). READ IN OPENING SIZE OF GUY REQUIRED FOR A SIDE GUY (10M).

EXAMPLE: $\frac{\text{LEAD}}{\text{HEIGHT}} = 1$ AND PULL ON POLE = 20 FEET. IF 16,000 POUND SUSPENSION STRAND IS CARRIED ON POLE, 10,000-POUND GUY IS REQUIRED.

Fig. 2—Guy Rule Used to Determine Size of Side Guy—Cable Lines

4. DETERMINING SIZE OF STRAND FOR HEAD GUY—CABLE ONLY

4.01 Proceed as described in paragraph 3.01(1) through (3).

(1) Set "LEAD" IN FEET/ "HEIGHT" IN FEET shown on outer scale of small disc, opposite arrow marked CABLE HEAD GUY shown on outer scale of large disc (Fig. 3).

(2) Opposite SIZE OF SUSPENSION STRAND shown on inner scale of small disc, read in opening, SIZE OF GUY REQUIRED.

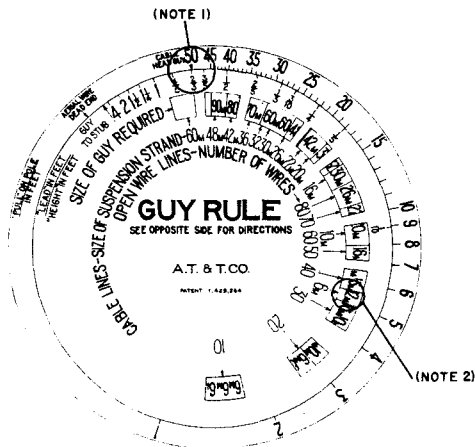
5. DETERMINING SIZE OF STRAND FOR SIDE OR HEAD GUY TO STUB POLE OR TREE—CABLE ONLY

5.01 Where the guy is attached to a stub pole or tree and is approximately parallel to the ground with a LEAD/HEIGHT of more than four, proceed as follows:

(1) Measure pull on pole in feet (side guy only).

(2) Set GUY TO STUB shown on outer scale of small disc opposite "PULL" ON POLE IN FEET or CABLE HEAD GUY shown on outer scale of large disc, *depending* upon whether guy is a side guy or head guy.

(3) Opposite SIZE OF SUSPENSION STRAND shown on inner scale of small disc, read in opening, SIZE OF GUY REQUIRED (Fig. 4).

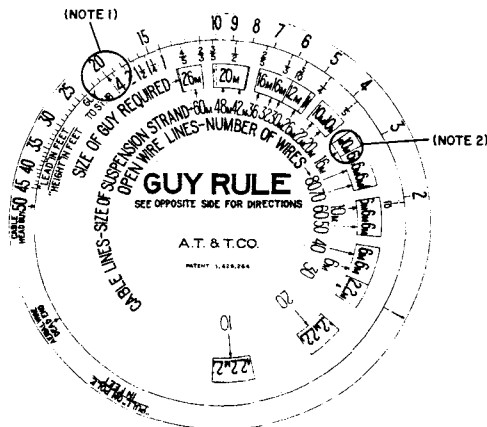


NOTES:

1. SET "LEAD" IN FEET "HEIGHT" IN FEET OPPOSITE CABLE HEAD GUY.
2. OPPOSITE SIZE OF SUSPENSION STRAND CARRIED ON POLE (6M). READ IN OPENING SIZE OF GUY REQUIRED FOR HEAD GUY (12M).

EXAMPLE:

ASSUME $\frac{\text{LEAD}}{\text{HEIGHT}} = \frac{2}{3}$ AND POLE TO CARRY ONE 6000-POUND SUSPENSION STRAND. READ IN OPENING THAT 12,000 POUND GUY REQUIRED.



NOTES:

1. SET GUY TO STUB OPPOSITE "PULL" ON POLE IN FEET.
2. OPPOSITE SIZE OF SUSPENSION STRAND CARRIED ON POLE (16M). READ IN OPENING SIZE OF GUY REQUIRED FOR GUY TO STUB, POLE OR TREE (10M).

EXAMPLE:

ASSUME GUY IS SIDE GUY, PULL ON POLE = 20 FEET, AND POLE CARRIES ONE 16,000-POUND SUSPENSION STRAND. READ IN OPENING THAT 10,000-POUND GUY REQUIRED.

Fig. 3—Guy Rule Used to Determine Size of Strand for Head Guy—Cable Lines

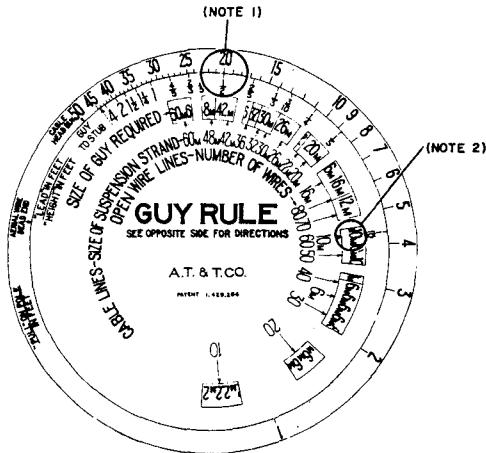
Fig. 4—Guy Rule Used to Determine Size of Strand for Guy to Stub Pole or Tree—Cable Lines

6. DETERMINING SIZE OF STRAND FOR ANCHOR GUY TO STUB—CABLE ONLY

6.01 Proceed as described in paragraph 3.01(1) through (4).

(1) Set "LEAD" IN FEET/ "HEIGHT" IN FEET of guy shown on outer scale of small disc opposite "PULL" ON POLE IN FEET shown on outer scale of large disc.

(2) Opposite SIZE OF SUSPENSION STRAND on the pole shown on inner scale of small disc, read in opening, SIZE OF GUY REQUIRED, for anchor guy to stub (Fig. 5).



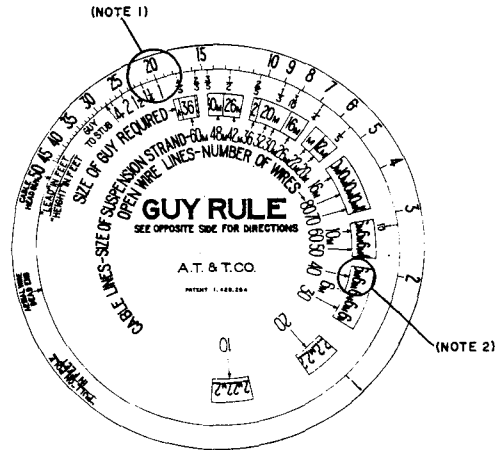
NOTES:
 1. SET "LEAD" IN FEET OPPOSITE "PULL" ON POLE IN FEET.
 2. OPPOSITE SIZE OF SUSPENSION STRAND CARRIED ON POLE (10M). READ IN OPENING SIZE OF GUY REQUIRED FOR AN ANCHOR GUY TO STUB (10M).

EXAMPLE:
 ASSUME $\frac{\text{LEAD}}{\text{HEIGHT}} = 1/2$ AND PULL ON POLE = 20 FEET. IF LINE POLE CARRIES 10,000-POUND SUSPENSION STRAND, 10,000-POUND GUY REQUIRED FOR ANCHOR GUY.

Fig. 5—Guy Rule Used to Determine Size of Strand for Anchor Guy to Stub Pole—Cable Only

7. DETERMINING SIZE OF STRAND FOR SIDE GUY—WIRE ONLY

7.01 Proceed as described in paragraph 3.01(1) through (5). Opposite the NUMBER OF WIRES carried on the pole shown on the inner scale of the small disc, read in opening, SIZE OF GUY REQUIRED (Fig. 6).



NOTES:
 1. SET "LEAD" IN FEET OPPOSITE "PULL" ON POLE IN FEET.
 2. OPPOSITE NUMBER OF WIRES CARRIED ON POLE (40). READ IN OPENING SIZE OF GUY REQUIRED FOR SIDE GUY (6M).

EXAMPLE:
 ASSUME $\frac{\text{LEAD}}{\text{HEIGHT}} = 1$ AND PULL ON POLE = 20 FEET. IF 40 WIRES CARRIED ON POLE, 6000-POUND GUY REQUIRED.

Fig. 6—Guy Rule Used to Determine Size of Strand for Side Guy—Wire Lines

8. DETERMINING SIZE OF STRAND FOR HEAD GUY—WIRE ONLY

8.01 Proceed as in paragraph 3.01(1) through (3).

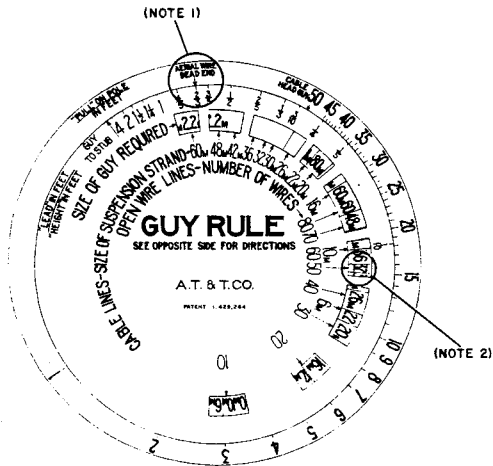
(a) *For bare wire:*

- (1) Set "LEAD" IN FEET/ "HEIGHT" IN FEET shown on outer scale of small disc opposite arrow marked AERIAL WIRE DEAD END shown on outer scale of larger disc.
- (2) Opposite equivalent NUMBER OF WIRES carried on the pole shown on the inner scale of the small disc, read in opening, SIZE OF GUY REQUIRED (Fig. 7).

(b) *For insulated wire:*

- (1) Set "LEAD" IN FEET/ "HEIGHT" IN FEET shown on outer scale of small disc opposite "PULL" ON POLE IN FEET of 50 shown on outer scale of large disc.
- (2) Opposite equivalent NUMBER OF WIRES carried on the pole shown on the inner scale of the small disc, read in opening, SIZE OF GUY REQUIRED.

(c) When both bare wires and insulated wires are carried on the same pole, determine size of guy for each type separately.



NOTES: "LEAD" IN FEET
 1. SET "HEIGHT" IN FEET. OPPOSITE AERIAL WIRE DEAD END.
 2. OPPOSITE NUMBER OF WIRES CARRIED ON POLE (50). READ IN OPENING SIZE OF GUY REQUIRED FOR HEAD GUY (32M).
 EXAMPLE: LEAD = 2/3 AND POLE CARRIES 50 WIRES. READ IN OPENING THAT 32,000-POUND GUY REQUIRED.

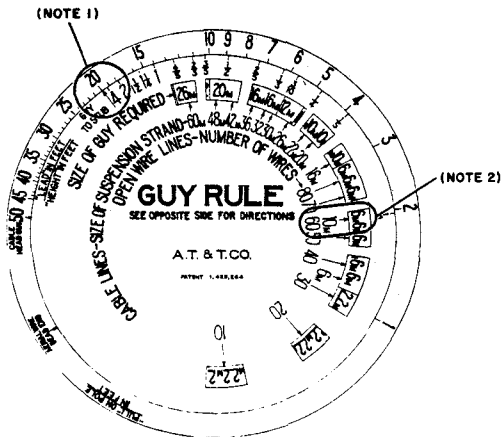
Fig. 7—Guy Rule Used to Determine Size of Strand for Head Guy—Wire Lines

9. DETERMINING SIZE OF STRAND FOR SIDE OR HEAD GUY TO STUB POLE OR TREE—WIRE ONLY

9.01 Where the guy is attached to a stub pole or tree and is approximately parallel to the ground, with a LEAD/HEIGHT of more than four, proceed as follows:

- (1) Measure pull on pole in feet (side guy only).
- (2) Set GUY TO STUB shown on outer scale of small disc opposite "PULL" ON POLE IN FEET or AERIAL WIRE DEAD END shown on outer scale of large disc, depending upon whether guy is a side guy or head guy.

(3) Opposite NUMBER OF WIRES carried on pole shown on the inner scale of the small disc, read in opening, SIZE OF GUY REQUIRED (Fig. 8).



NOTES:

1. SET GUY TO STUB OPPOSITE "PULL" ON POLE IN FEET.
2. OPPOSITE NUMBER OF WIRES CARRIED ON POLE (60M). READ IN OPENING SIZE OF GUY REQUIRED FOR GUY TO STUB, POLE OR TREE (6M).

EXAMPLE:

ASSUME THAT GUY IS SIDE GUY, PULL ON POLE = 20 FEET, AND POLE CARRIES 60 WIRES. READ IN OPENING THAT 6000-POUND GUY REQUIRED.

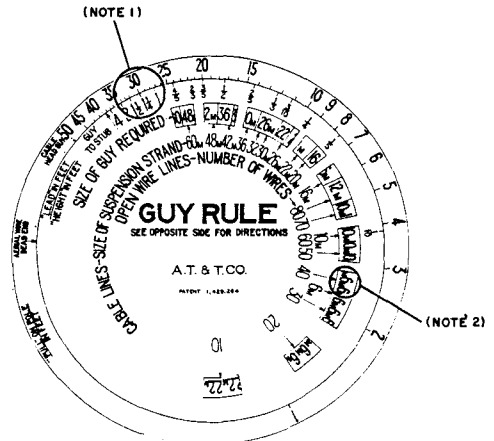
Fig. 8—Guy Rule Used to Determine Size of Strand for Guy to Stub Pole or Tree—Wire Lines

10. DETERMINING SIZE OF STRAND FOR ANCHOR GUY TO STUB—WIRE ONLY

10.01 Proceed as described in paragraph 3.01(1) through (4).

(1) Set "LEAD" IN FEET/ "HEIGHT" IN FEET shown on outer scale of small disc opposite PULL ON POLE IN FEET shown on outer scale of large disc.

(2) Opposite NUMBER OF WIRES carried on the pole shown in inner scale of small disc, read in opening, SIZE OF GUY REQUIRED, for anchor guy to stub (Fig. 9).



NOTES:

1. SET "LEAD" IN FEET OPPOSITE "PULL" ON POLE IN FEET. SET "HEIGHT" IN FEET
2. OPPOSITE NUMBER OF WIRES CARRIED ON POLE (40). READ IN OPENING SIZE OF GUY REQUIRED FOR ANCHOR GUY TO STUB (6M).

EXAMPLE:

LEAD = 1-1/4 AND PULL ON POLE = 20 FEET. IF LINE ASSUME HEIGHT = 20 FEET. POLE CARRIES 40 WIRES, 6000-POUND ANCHOR GUY REQUIRED

Fig. 9—Guy Rule Used to Determine Size of Strand for Anchor Guy to Stub Pole—Wire Lines

11. STRENGTH OF STRAND FOR GUYS ON POLES SUPPORTING BOTH WIRE AND CABLE

11.01 In general, separate guys shall be provided for open wire and cable on the same pole line. The strength of the guys shall be determined for each separately by the methods described in the preceding paragraphs.

11.02 Where one guy is placed for both aerial wire and cable, or where it is desired to determine whether an existing guy is of sufficient strength to support both the aerial wire and cable, the size of guy required shall be determined by use of the guy rule. To do this, add to the strength of the cable suspension strand 2000 pounds for each arm of open wire on the pole and substitute the total for **SIZE OF SUSPENSION STRAND** on the guy rule.

Example: To find the equivalent size of suspension strand for a line carrying two crossarms of open wire and a cable supported on a 6000-pound suspension strand is as follows:

Size of suspension strand.....6000 pounds

2 crossarms
(2 × 2000 pounds).....4000 pounds

Equivalent size of
suspension strand.....10,000 pounds

11.03 Determine the size of guy required by substituting the equivalent for the size of suspension strand. If the exact equivalent is not shown on the guy rule, use the next larger size.

12. SIZES OF HEAD GUYS AS DETERMINED BY GUY RULE

12.01 Table A indicates the sizes of head guys as determined by reference to the guy rule.