

DIRECTIONS FOR USE OF STADIA CHART

Cut vertical scale along line C D; fasten on T square with thumb tacks so that line A B coincides with right edge of T square; adjust chart so that edge C D of vertical scale parallels vertical line on chart and zero on vertical scale coincides with the zero degree line on chart.

The horizontal and vertical scales work in pairs. Select in a color, the rod reading on horizontal scale, then look in the same color for the results.

The formulas used in the construction of this chart are:

$$\begin{aligned} \text{Difference of elevation} &= \frac{1}{2} \sin 2a \\ \text{Horizontal distance} &= \frac{\cos 2a}{\cos^2 a} \end{aligned}$$

EXAMPLE 1:

Rod reading 192 feet; angle of elevation 30°

On horizontal scales find 192 on the yellow; follow up arc to point which coincides with 30° line; place pricker at this point; slide vertical scale to pricker. Read vertical scale on the yellow 83 feet, equals difference of elevation, and horizontal scale on the yellow 144 feet, equals horizontal distance.

EXAMPLE 2:

Rod reading 506 feet; angle of elevation 16° 15'

On horizontal scales find 506 on the red; follow up arc to point which coincides with the 16° 15' line. Proceed as in previous example and read on vertical scale 136 feet, equals difference of elevation, and horizontal scale 466.5 feet, equals horizontal distance.

MINES AND MINERALS Stadia Chart

Devised by E. B. Tinker, Chief Engineer
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