

# TECHNICAL NOTES

## The Focal-Point Technique of Vegetation Inventory<sup>1</sup>

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### Highlight

The focal-point technique of vegetation inventory is designed to permit random selection of points on a circular-line transect. The telescope from a surveyor's transit or level is the key to the device. Properly mounted on a tripod, the instrument permits identification of species and recording of point "hits" from a standing position.

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Numerous variations to the point-quadrat method of vegetation analysis as presented by Levy and Madden (1933) have been proposed and used by range researchers. The variations have been developed to increase accuracy and efficiency when working in different plant communities.

The focal-point is a variation of the crosswire sighting tube described by Winkworth (1962). It is designed to permit random selection of points on a circular-line transect. It further permits the researcher to make positive identification of species and record the data from a standing position.

A telescope from a surveyor's transit or level is the key part of the focal-point device. The barrel of the telescope is attached to the end of an aluminum tube (Fig. 1). The tube is secured to the top of a 20-inch,

pressed-wood disk. The pressed-wood disk with telescope attached is rotated on the surface of a second disk of similar size and material. The

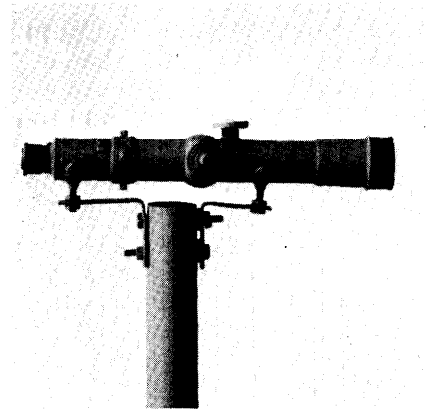


FIG. 1. The telescope of a surveyor's transit is attached to an aluminum tube.

second disk is rigidly mounted to the top of a tripod (Fig. 2). The outer perimeter of the lower disk is divided into 100 equal, consecutively-numbered segments. The number of a specific segment is visible through a small aperture in the top disk.

The telescope can be rotated about the central axis of the transit. Any randomly-selected number or group of numbers may be used as the basis for locating the point on the circular transect. The length of the circular-line transect is determined by the radial length of the tube holding the telescope (Fig. 3). This may be varied to suit the needs or desires of the operator.

The focal mechanism and magnification of the telescope assists in making possible the specific identification of plants. On the equipment at the Scotts Bluff Agricultural Experiment Station, a 7A Kodak portrait lens was placed in the interior of the transit to shorten the focal distance of the telescope even more. It is possible to focus the instrument on any object from the ground to a height of 24 inches. The crosshair of

the telescope provides a precise point to observe.

Bareground, litter or the uppermost species upon which the crosshair is focused in descent to ground level is recorded. Any number of randomly-selected points (1-100) read at one location comprises one transect.

The location of the transect can be accomplished by any one of the methods acceptable for the location of vegetation-survey transects. At Nebraska, transects are located at each point of a predetermined grid or at randomly-selected locations on such a grid.

After four years of testing at the Scotts Bluff Experiment Station by range technician Larry Rittenhouse, it is believed that this equipment yields reliable data. Although still possessing weaknesses of the point system, the ease of operation and elimination of bias through random location of points merits its continued use.

Disadvantages of the use of such equipment include:

1. Movement of vegetation and

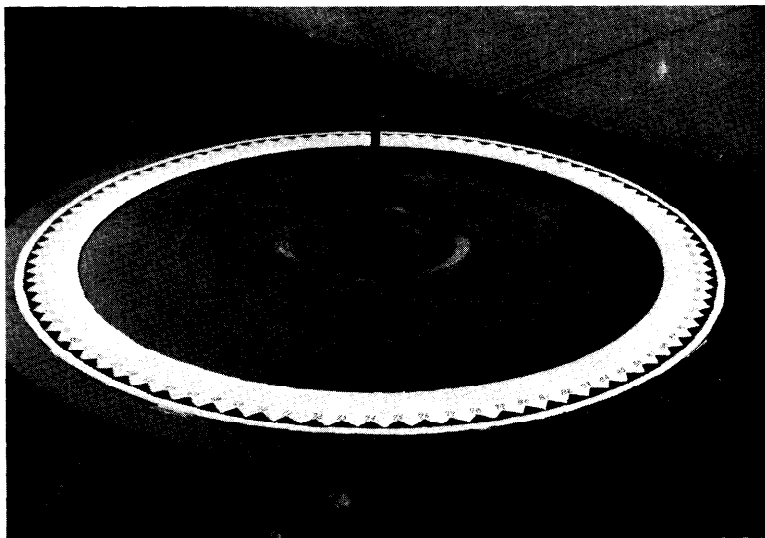


FIG. 2. The lower disk is rigidly mounted to the top of a tripod. One hundred points are marked on this disk.

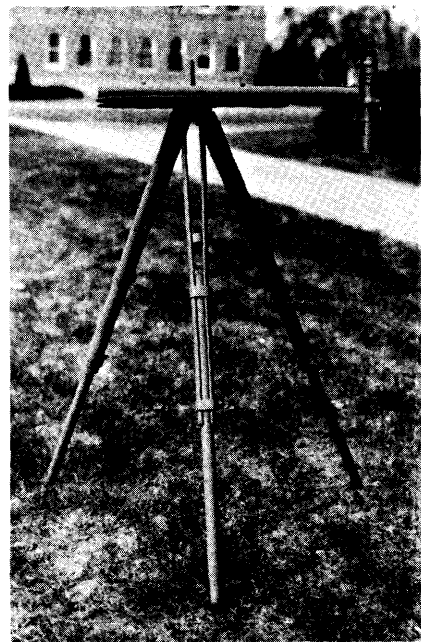


FIG. 3. The length of the circular-line transect is determined by the radial length of the tube holding the telescopes.

equipment on windy days. This is a problem common to all point systems. A 3-foot, semicircular, wind barrier is helpful but lowers efficiency.

2. Early morning and late afternoon shadows make identification of specific vegetation difficult in complex, dense stands.

3. Although of little importance to total vegetation cover, species of low frequency are often missed for presence records.

#### LITERATURE CITED

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