

## GENERAL REMARKS

The transit theodolite used on the survey of Block Outlines is described briefly in Appendix "D" of the Manual of Surveys.

A Block Surveyor may, in the course of his work, have to perform the following operations:

1. To run a straight line.
2. To turn off or measure small angles, such as: The deflection of base lines at township corners, the measurement of the angle between the Pole Star and the meridian, and the telemetric measurement of distances.
3. To turn off or measure large azimuth angles, such as: The turning off of base lines from meridians, and the measurement of angles in triangulations.
4. To determine the direction of the astronomical meridian.
5. To determine the latitude.
6. To determine the local time or the longitude.

Accuracy in running straight lines is secured by a long transverse axis, a powerful telescope, and an eye-piece micrometer for measuring small deviations. The measurement of small angles, either horizontal or vertical, is made with precision with the eye-piece micrometer. Accuracy in measuring or laying off larger angles is obtained by micrometer microscopes. The powerful telescope, eye-piece micrometer, diaphragm and sensitive levels render the instrument especially convenient and accurate for the determination of the meridian by Pole Star observations in day time, of the local time by meridian transits and of the latitude by Talcott's method.

It is used without the clamp of the transverse axis for running lines, fig. 1; for observing for local time by meridian transits, fig. 2; and for observing azimuth in day time, figs. 3 and 4. The clamp arm is put on for making instrumental adjustments and for latitude observations, in which case the instrument is used as a zenith telescope, figs. 5 and 6.

These instructions and explanations have been prepared for the purpose of supplying to surveyors only certain requisite information not readily obtainable from text-books, and also certain information peculiar to this type of instrument.