

Field Notes the Primary Record of Survey.

23. As the field notes are the primary record of survey, are accepted as evidence in a Court of law, and are for departmental reference, it is of importance that they should be precise and complete, indexed for purposes of ready reference, and kept in a neat and systematic manner. (See Appendix B.)

FIELD WORK OF SURVEY.

Standard Band.

24. Every surveyor shall keep a steel or invar band to be used solely as a standard; such standard band shall not be used until it has been compared by an authorized officer of the Department of Lands and Survey, and certified as correct under a tension of 15 lb. at a given temperature. The surveyor shall have his standard band tested annually, and at such other times as the Surveyor-General may direct.

Field Measurements.

25. Field measurements shall be made with a steel or invar band or tape, tested at frequent intervals with the surveyors' standard band. A tension of 15 lb. shall be applied by means of a spring balance, carefully tested for index error, and the measurements corrected for the difference of temperature above or below the temperature at which the band is standard length.

Theodolite.

26. A transit theodolite of a diameter of not less than 5 in., in accurate adjustment, shall be used on all surveys under these regulations. The use of a theodolite of a different pattern or of a smaller diameter will not be permitted except with the consent in writing of the Surveyor-General.

Bearings referred to the North Point.

27. Bearings shall in every case be measured in degrees, minutes, and seconds of arc, from the north point of the true meridian of the initial station as zero, in a clockwise direction, from 0° to 360°.

Angles to be measured on Both Faces.

28. Angles shall in every case be measured and repeated with instrument "face left" and "face right," the first and final readings being recorded in the field-book, as well as the adopted mean value of the angle.

Angular and Linear Measurements to be recorded in Detail.

29. Instrumental observations to determine the bearings of lines, the actual measurement of lengths, and the angles of elevation and depression shall be clearly recorded in detail in the field-book.

Sets of Readings.

30. At each station of a connecting triangle a complete set of readings shall be taken as follows:—

- (a.) Face direct: Vernier A set approximately to back bearing of the station of origin; all other stations being observed in consecutive order from left to right, the return reading of origin being also booked, care being taken not to overshoot any station.
- (b.) Vernier A being moved on 90°, a second round is taken in the same manner.
- (c.) Face reversed: Vernier A is set forward 45° and a third round taken as before.
- (d.) Vernier A is moved forward 90° and a fourth round taken, which completes the set.

The method of entering the readings is shown in the specimen page of field-book. (See Appendix C.)

Limit of Error.

31. The limit of error in the summation of the angles of a triangle must not exceed 20".

Initial Bearing.

32. The bearing adopted as origin shall be clearly shown on the plan, and the closing and check bearings shall be also shown in the field-book.

New Survey to be connected to Triangulation or to Old One.

33. Where a trigonometrical survey is in existence all surveys shall be connected to it either by well-conditioned triangles or by direct chainage, except in cases where the survey is adjacent to prior surveys which have been sufficiently connected to the triangulation and in which the survey pegs have not been disturbed.