

Here all the pointings are checked simply by repeating them and the same may be said of some of the distance readings. But all such repetitions are made at sufficiently long intervals of time, to become virtually fresh determinations of practically the same elevations and corresponding rod spaces, for, under ordinary circumstances neither the diaphragm nor the level of the telescope is ever sensibly disturbed during the short time spent between two consecutive stations. Besides, by comparing the difference (6.955) in the elevation between the two backsight level readings taken from any station (50), with the difference (6.954) which obtained between the two corresponding level foresight readings from the preceding station (49) as proposed, we cannot fail to detect at once any notable change in the discrepancy in readings caused by a defective collimation or an imperfectly adjusted telescope level, and hence can make a proper allowance for the same, or proceed to rectify the adjustment on the spot as may be found most desirable.

The method of carrying on geodetic levelling operations with the "Sanguet Tacheometer" and the new rod just described, will prove much more expeditious than that generally followed by the United States Coast and Geodetic Survey with the geodesic pivot level and their rod with chain target and the similar method adhered to by me for some fifteen years past, in the running lines of precision levels along the Richelieu, the St. Lawrence, &c. With the new method, the number of entries to be made in the field book becomes reduced by about one-half and nearly all the ordinary, somewhat bulky, computations are dispensed with, without the precision and reliability claimed for the present geodesic methods being in any way lessened. I believe, on the contrary, that more precise results are likely to be secured and at less expense.

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