

Retracement of E. Bdy. T. 37 N., R. 25 E.

1.

Chains.

Survey commenced May 7, 1915, and executed with Young and Sons' light mountain transit No. 8390, with Smith solar attachment. The horizontal limb is provided with two double verniers placed opposite to each other and reading to single minutes of arc, which is also the least count of the verniers of the lat. and decl. arcs. The instrument was approved by Mr. G. D. D. Kirkpatrick, Assistant Supervisor of Surveys, at Salt Lake City, Utah. Measurements were made with a steel tape, 5.00 chs. in length; the first 100 lks. being graduated to links and the remainder to 10 lks. Vertical angles were read with a clinometer.

I examine the adjustments of the transit and find them satisfactory, then to test the solar apparatus by comparing its indications resulting from solar observations made during a.m. and p.m. hours with a meridian determined by observations on Polaris, I proceed as follows:

At my camp in T. 37 N., R. 25 E., sec. 27, lat. $41^{\circ} 5'$ N., longitude $119^{\circ} 9'$ W. at 8 h. 30.5 m. p.m., l.m.t., I observe Polaris in accordance with the instructions in the Manual, and mark a point in the line thus determined on a stake firmly driven in the ground, about 5 chs. N. of my station.

Time of observation, May 7, 8h. 30.5m.
 Equivalent to a.m. time of May 7, 20 30.5
 U.C. Polaris, Greenwich, May 7, a.m.

10h. 31.4m.

Reduced to local longitude, ... 1.3

U.C. Polaris at point of observation, 10 30.1 10. 30.1

Hour angle of Polaris at observation and time argument, 10h. 00.4m.

Azimuth of Polaris at observation, $0^{\circ} 44.3'$ W., May 7, 1915.

May 8: At 7h. 00m. a.m., I lay off the azimuth on Polaris $0^{\circ} 44.3'$ to the E., and mark a point in the true meridian thus determined on a stake firmly driven in the ground, about 5 chs. N. of my station.

May 8, 1915.

May 9: At 9h. 0m. a.m., l.m.t., I set off $41^{\circ} 5'$ on lat. arc and $17^{\circ} 12.5'$ N. on decl. arc and determine with the solar at this station a meridian, which, I note, is a little less than $0.5'$ to the right of the true meridian established by the Polaris observation.

At this station I set off $17^{\circ} 14'$ N. on decl. arc, and at about 11h. 56m. a.m., l.m.t., observe the sun on the meridian, resulting latitude $41^{\circ} 5'$.

At 3h. 0m. p.m., l.m.t., set off $41^{\circ} 5'$ on lat. arc and $17^{\circ} 16.5'$ N. on decl. arc, and determine with the solar at this station a meridian, which I note, coincides with the meridian established by the Polaris observation.

I conclude therefore, that the adjustments of the instrument are satisfactory.

May 9, 1915.

May 19: At 8h. 15m. a.m., l.m.t., set $41^{\circ} 3.5'$ on lat. and $19^{\circ} 39'$ N. on decl. arc, and determine meridian with solar at the corner of Ts. 36 and 37 N., Rs. 25 and 26 E., hereinafter described. Longitude $119^{\circ} 6'$ W. Thence I retrace north, on the E. bdy. of T. 37 N., R. 25 E., looking for old corners or evidences thereof at intervals of 40 chs., but finding none short of the township corner.

240.00

At this point I set off $19^{\circ} 40.5'$ N. on decl. arc, and at about 11h. 56m. a.m., l.m.t., observe the sun on the meridian, resulting latitude $41^{\circ} 6.5'$.

400.00

At this point I quit for the day. May 19, 1915.