

## COLORADO.

### TRIANGULATION STATIONS.

#### Creede and Del Norte quadrangles.

#### MINERAL, RIO GRANDE, AND SAGUACHE COUNTIES.

During the season of 1914 J. R. Ellis extended triangulation northeast from stations Belleview and South River, described in Bulletin 440. Four stations were occupied and seven points were located by intersections, all on North American datum.

#### BARN, RIO GRANDE COUNTY, COLO. (Not occupied.)

South end of barn about 6 miles northwest of Del Norte.

[Latitude 37° 41' 54.48". Longitude 106° 26' 05.20".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	Log. meters.	Miles.
Del Norte.....	223 06 33	223 06 33	4.21825	10.271
East Butte.....	238 56 18	58 59 29	3.95097	5.550
Dog.....	322 48 10	142 51 26	4.11416	8.082

#### BELLEVIEW, RIO GRANDE COUNTY, COLO.

Situated on east end of Belleview Mountain, locally known as North Mountain, about 1 mile north of the nearly abandoned town of Summitville.

Station mark: A rock monument 7 feet base and 9 feet high, probably erected by the Wheeler Survey.

Reference mark: The point occupied by theodolite is a hole drilled in a large rock (cracked) in which is cemented a nail with the head projecting 0.25 inch and over which a rock monument 2 feet base and 3 feet high was erected. True bearing from station 227° 43', distant 9.9 feet.

[Latitude 37° 27' 02.48". Longitude 106° 36' 14.98".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	Log. meters.	Miles.
Summit.....	36 23 20.74	216 19 59.08	4.1390418	.....
Pagosa.....	89 06 35.64	268 49 43.89	4.6118040	.....
South River.....	112 28 06.51	292 14 20.07	4.5567810	.....
Del Norte.....	193 15 16.41	13 16 46.77	4.2007172	9.804
Bennett.....	256 24 49.58	76 31 02.92	4.1906878	9.639

#### BENNETT, RIO GRANDE COUNTY, COLO.

Situated in the highest part of Bennett Peak and at the headwaters of San Francisco Creek.

Signal: A cairn 4.5 feet base by 6.5 feet in height.

Station mark: A bronze tablet set in rock under center of cairn.

[Latitude 37° 29' 00.24". Longitude 106° 26' 01.25".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	Log. meters.	Miles.
Belleview.....	76 31 02.92	256 24 49.58	4.1906878	9.639
South River.....	101 55 42.71	281 35 42.09	4.6940039	30.715
Del Norte.....	136 00 50.46	315 56 08.92	4.2159060	10.215
East Butte.....	194 51 25.54	14 54 33.85	4.4692850	18.308
Observatory.....	197 28 28.00	.....	4.34010	13.597
Chimney.....	209 19 48.00	.....	4.44964	17.498
Dog.....	209 53 36.70	29 56 49.63	4.1926261	9.682
Center.....	224 05 53.00	.....	4.62204	26.025
Red Silo.....	226 30 21.00	.....	4.45018	17.520
White Silo.....	211 07 06.00	.....	4.59736	24.587

**CENTER, SAGUACHE COUNTY, COLO. (Not occupied.)**

West end of yellow elevator at Center.

[Latitude 37° 45' 14.10". Longitude 106° 06' 10.73".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	Log. meters.	Miles.
Bennett.....	.....	224 05 54	4.62201	26.023
Dog.....	52 25 43	232 16 49	4.43209	16.805
East Butte.....	85 58 18	265 49 18	4.33541	13.451

**CHIMNEY, RIO GRANDE COUNTY, COLO. (Not occupied.)**

Chimney on new house 5 or 6 miles northeast of Del Norte and 0.25 mile north of main irrigation ditch.

[Latitude 37° 42' 16.14". Longitude 106° 16' 38.14".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	Log. meters.	Miles.
Dog.....	28 43 47	208 41 16	4.09962	7.816
Bennett.....	.....	209 19 48	4.44964	17.498
East Butte.....	122 17 57	302 15 21	3.86766	4.542

**DEL NORTE, RIO GRANDE COUNTY, COLO.**

Situating on the highest point of Del Norte Peak and about 14 miles southwest of Del Norte town. A wagon road leads from Del Norte to Hogback Mesa, from which the station may be reached by horseback.

Signal: A cairn 5 feet base by 6 feet in height.

Station mark: A bronze tablet set in solid rock under center of cairn.

[Latitude 37° 35' 23.67". Longitude 106° 33' 46.62".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	Log. meters.	Miles.
Belleview.....	13 16 46.77	193 15 16.41	4.2007172	9.864
South River.....	87 25 24.82	267 10 06.59	4.5679884	22.979
South end of barn.....	223 06 33	.....	4.21825	10.271
East Butte.....	228 39 04.67	48 46 57.57	4.4021214	15.685
Chimney.....	243 08 46	.....	4.45086	17.557
Observatory.....	243 13 48	63 21 16	4.30393	12.511
Center.....	245 41 54	.....	4.64816	27.638
Dog.....	264 54 57.23	85 02 54.33	4.2845837	11.966

**DEL NORTE OBSERVATORY, RIO GRANDE COUNTY, COLO. (Not occupied.)**

Center of dome of observatory on low hill on south edge of Del Norte.

[Latitude 37° 40' 17.18". Longitude 106° 21' 33.11".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	<i>Log. meters.</i>	<i>Miles.</i>
Bennett.....	17 31 12	197 28 28	4.34010	13.597
Del Norte.....	63 21 16	243 13 48	4.30393	12.511
East Butte.....		7 25 27	3.88479	4.766

**DOG MOUNTAIN, RIO GRANDE COUNTY, COLO.**

Situated on the highest point of Dog Mountain, a sharp peak about 6 miles due south of Del Norte.

Signal: A cairn 5 feet base by 6 feet in height.

Station mark: A bronze tablet set in solid rock under center of cairn.

[Latitude 37° 36' 18.31". Longitude 106° 20' 44.64".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	<i>Log. meters.</i>	<i>Miles.</i>
Bennett.....	29 56 49.63	209 53 36.70	4.1926261	9.682
Del Norte.....	85 02 54.33	264 54 57.23	4.2845837	11.966
South end of barn.....	142 51 26	322 48 10	4.11416	8.082
East Butte.....	179 14 42.70	359 14 37.77	4.1752526	9.303
Chimney.....	208 41 16	28 43 47	4.09962	7.816
White Silo.....	211 58 03	32 03 21	4.37998	14.905
Center.....	232 16 49	52 25 43	4.43209	16.805
Red Silo.....	245 07 32	65 12 48	4.14586	8.694
Monte Vista.....	279 06 49	99 15 17	4.31578	12.857

**EAST BUTTE, RIO GRANDE COUNTY, COLO.**

Situated on the highest part of the eastmost of two buttes about 3.5 miles north of Del Norte. A wagon road runs north and south between the two buttes.

Signal: A rock cairn 4.5 feet base by 6 feet in height.

Station mark: A bronze tablet set in solid rock under center of cairn.

[Latitude 37° 44' 23.86". Longitude 106° 20' 52.69".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	<i>Log. meters.</i>	<i>Miles.</i>
Observatory.....	7 25 27		3.88479	4.766
Bennett.....	14 54' 33.85	194 51 25.54	4.4692850	18.308
Del Norte.....	48 46 57.57	228 39 04.67	4.4021214	15.685
South end of barn.....	58 59 29	238 56 18	3.95097	5.550
White Silo.....	247 21 20	67 26 43	4.14532	8.683
Center.....	265 49 18	85 58 18	4.33541	13.451
Chimney.....	302 15 21	122 17 57	3.86766	4.542
Red Silo.....	305 10 24	125 15 45	4.19784	9.779
Monte Vista.....	311 29 42	131 38 16	4.43996	17.112
Dog.....	359 14 37.77	179 14 42.70	4.1752526	9.303

**MONTE VISTA, RIO GRANDE COUNTY, COLO. (Not occupied.)**

Station mark: Center of chimney on sugar beet factory, 1 mile east of Monte Vista.

[Latitude 37° 34' 31.20". Longitude 106° 06' 52.08".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	<i>Log. meters.</i>	<i>Miles.</i>
Del Norte.....		272 12 13	4.59825	24.638
Dog.....	99 15 17	279 06 49	4.31578	12.857
East Butte.....	131 38 16	311 29 42	4.43996	17.112

**RED SILO, RIO GRANDE COUNTY, COLO. (Not occupied.)**

About 7 miles northwest of Monte Vista.

[Latitude 37° 39' 28.88". Longitude 106° 12' 06.77".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	<i>Log. meters.</i>	<i>Miles.</i>
Bennett.....		226 30 21	4.45018	17.520
Dog.....	65 12 48	245 07 32	4.14586	8.694
Del Norte.....		256 32 53	4.51534	20.356
East Butte.....	125 15 45	305 10 24	4.19784	9.799

**SOUTH RIVER, MINERAL COUNTY, COLO.**

On the summit of South River Peak, situated at the head of Red Mountain Creek which enters the Rio Grande from the south at the bend in river about 12 miles southwest of creek, and is at the east side of the east branch of the creek. A road reaches the basin about 1 mile distant from the peak via Red Mountain Creek. From the terminus of this road a trail leads across the divide and to Pagosa Spring.

Station mark: A bronze tablet cemented in rock, over which a cairn 3½ feet in diameter and 6 feet high was erected.

[Latitude 37° 34' 27.08". Longitude 106° 58' 52.17".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	<i>Log. meters.</i>	<i>Miles.</i>
Pagosa.....	27 34 34.55	207 31 27.76	4.2119146	.....
Graham.....	76 22 58.54	256 08 33.20	4.5550681	.....
Pyramid.....	108 02 41.92	287 47 38.97	4.5811070	.....
Uncompahgre.....	142 41 50.92	322 24 10.27	4.8424016	.....
Bristol.....	165 05 40.79	345 02 58.99	4.4009798	.....
San Luis.....	185 30 42.19	5 32 33.17	4.6629397	.....
La Garita.....	197 54 21.81	17 59 30.83	4.6031924	.....
Ouray.....	214 58 56.69	35 26 54.26	5.0618017	.....
Del Norte.....	267 10 06.59	87 25 24.82	4.5679884	22.979
Bennett.....	281 35 42.09	101 55 42.71	4.6940039	30.715
Bellevue.....	292 14 20.07	112 28 06.51	4.5567810	.....
Summit.....	314 27 34.07	134 37 57.63	4.5484071	.....

**WHITE SILO, SAGUACHE COUNTY, COLO. (Not occupied.)**

Center of a white silo about 10 miles northeast of Del Norte.

[Latitude 37° 47' 18.04". Longitude 106° 12' 05.62".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	<i>Log. meters.</i>	<i>Miles.</i>
Bennett.....		211 07 06	4.59736	24.587
Dog.....	32 03 31	211 58 03	4.37998	14.905
Del Norte.....		235 14 42	4.58827	24.078
East Butte.....	67 26 43	247 21 20	4.14532	8.683

**Pagoda 30' quadrangle.****MOFFATT, RIO BLANCO, AND ROUTT COUNTIES.**

During the season of 1915 C. B. Kendall extended triangulation southeastward from stations Cedar and Williams. Five new primary stations were occupied, and eight secondary points were located by intersections. Positions are on approximate North American datum as derived from stations Morrison and Table Mound, Colo.,



through Wyoming triangulation. (See Bull. 551, pp. 79 to 88, inclusive.)

**A, ROUTT COUNTY, COLO. (Not occupied.)**

On same divide as Williams triangulation station and about 2.5 miles northwest of same. It can be best reached by following trail up the first canyon northwest of Pagoda post office on Williams Fork, near Mr. Hughes's residence and about 1 mile from the post office. Station is 0.5 mile northwest of point where this canyon heads. The greater part of the hill was cleared.

Signal: Pole quadripod with flags.

Station mark: Bench mark in 8 by 10 by 24 inch sandstone centered under signal.

[Latitude 40° 22' 32.6". Longitude 107° 24' 18.2".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	<i>Log. meters.</i>	<i>Miles.</i>
Sleepy Cat.....	21 19 52	201 15 06	4.45945	.....
Natural.....	128 52 18	308 49 40	3.86578	.....
Cedar.....	142 28 04	322 20 11	4.44945	.....
Buck.....	149 31 51	329 30 01	3.90148	.....
Williams.....	307 34 03	127 35 28	3.59638	.....

**BAEIRL, ROUTT COUNTY, COLO.**

On divide between Dry Creek on the west and Sage Creek on the east. Station is about 1 mile southwest of the highest part on the divide known as Williams Fork Mountain and is about 1 mile west of point where the road leading from Hayden up Sage Creek crosses the divide between that creek and Willow Creek, about 3.5 miles northwest of Dunkley post office. Follow road from Hayden to Dunkley up Sage Creek until Mr. John Baierl's house is reached, which is the last house on Sage Creek, go through his fields and follow right-hand road to foot of hill, then by cow trails to the top. Station will be found on the highest point of hill due west of Mr. Baierl's house, about 1 mile.

Signal: A pole quadripod with flags.

Station mark: Standard bench mark tablet set in stone 8 by 8 by 24 inches under center of signal.

[Latitude 40° 21' 27.52". Longitude 107° 13' 24.90".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	<i>Log. meters.</i>	<i>Miles.</i>
Sage Willow.....	26 37 08	206 36 27	3.52503	.....
Williams.....	88 11 07.00	268 05 29.84	4.0896743	.....
Buck.....	114 36 29.69	294 27 35.12	4.3300629	.....
Hayden.....	161 15 00.05	341 12 10.37	4.2823334	.....
Twenty Mile.....	234 20 52.26	54 25 58.26	4.1366669	.....
Pinnacle.....	315 58 43.90	136 04 49.14	4.2835827	.....

**BUCK, ROUTT COUNTY, COLO.**

On the highest part of the mountain locally known as Buck Mountain. It is on the divide between Yampa River and Williams Fork of White River and 8 miles south-east of the town of Craig. The road from Hayden south by way of Deals Gulch to Williams Fork passes 3.5 miles west of the station, but as the country is fenced it can be best reached by road from Craig to Breeze Valley settlement, where a second-class road branches off and passes about 1 mile northeast of station. Leave this road at any convenient point and follow cow trails to summit of ridge and along ridge to top.

Signal: A pole quadripod with flags.

Station mark: A standard bench mark tablet in solid rock under signal.

[Latitude 40° 26' 15.38". Longitude 107° 27' 09.74".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	Log. meters.	Miles.
Geologist.....	6 29 52	186 29 04	4.19195	.....
Sleepy Cat.....	10 46 44	190 43 49	4.53544	.....
Natural.....	36 28 21	216 27 35	3.44940	.....
Cabin.....	65 25 32	245 23 17	3.73062	.....
Cedar.....	139 39 41	319 33 39	4.30675	.....
Hayden.....	235 02 14.68	55 08 20.32	4.2089395	.....
Fire House.....	248 19 25	68 27 09.15	4.25119	.....
Baerl.....	294 27 35.12	114 36 29.69	4.3300629	.....
Williams.....	322 15 53.73	142 19 10.84	4.0692085	.....
A.....	329 30 01	149 31 51	3.90148	.....
Spruce.....	341 19 31	161 22 44	4.33920	.....

**CABIN, MOFFATT COUNTY, COLO. (Not occupied.)**

Flag in tree about 0.5 mile east of road from Craig to Deals Gulch and near the head of Deals Gulch.

Signal and station mark: Flag.

[Latitude 40° 25' 02.8". Longitude 107° 30' 37.2".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	Log. meters.	Miles.
Buck.....	245 23 17	65 25 32	3.73062	.....
Williams.....	300 12 37	120 18 08	4.14522	.....
Cedar.....	155 00 56	334 57 08	4.29005	.....

**CEDAR, MOFFATT COUNTY, COLO.**

On highest point of Cedar Mountain, a well-known hill about 7 miles northwest of Craig. Animals can be ridden to summit.

Signal: A cairn 7 feet high.

Station mark: A triangulation tablet under center of cairn.

[Latitude 40° 34' 35.71". Longitude 107° 36' 27.43".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	Log. meters.	Miles.
Devils Hole (U).....	29 40 13.49	209 28 52.15	4.7012426	31.232
Brush (U).....	34 00 36.95	213 48 36.74	4.6718142	29.185
Juniper (U).....	68 28 35.29	248 12 10.27	4.5844446	23.867
Baker (U).....	198 38 10.87	18 44 07.78	4.6024983	24.880
Welba (U).....	222 04 07.88	42 13 42.22	4.4890545	19.160
Bears Ears (U).....	233 33 32.06	53 47 34.48	4.5760526	23.410
Hahn (U).....	242 30 38.17	62 57 11.84	4.8097394	40.095
Pilot (U).....	258 56 47.41	79 16 34.58	4.6400562	27.127
Williams (U).....	320 30 48.08	140 40 07.40	4.5049183	19.873
Pagoda (U).....	334 12 03.74	154 22 44.51	4.7309635	33.444
Peak (U).....	339 06 05.51	159 14 59.33	4.7383091	34.014
Sleepy Cat (U).....	352 08 11.08	172 11 16.70	4.6955362	30.824
Hayden (K).....	283 04 21.88	103 16 30.59	4.4327879	.....
Baerl (K).....	306 36 50.99	126 51 48.25	4.6089923	.....
Williams (K).....	320 30 48.08	140 40 07.40	4.5049183	.....
A (K).....	322 20 11	142 28 04	4.44945	.....
Natural (K).....	327 01 45	147 07 00	4.32398	.....
Cabin (K).....	334 57 08	155 00 56	4.29005	.....

NOTE.—U = values obtained by C. F. Urquhart in 1910; K = values obtained by C. B. Kendall in 1915.

**HAYDEN FIRE HOUSE, ROUTT COUNTY, COLO. (Not occupied.)**

In the town of Hayden, on the south side of the Moffat railroad, about 1,000 feet east of station. City fire and waterworks pumping station.

Signal and station mark: Smokestack in center of building.

[Latitude 40° 29' 48.3". Longitude 107° 15' 26.0".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	<i>Log. meters.</i>	<i>Miles.</i>
Williams.....	30 45 49	210 41 30	4.26561	.....
Buck.....	68 27 09	248 19 25	4.25119	.....

**GEOLOGIST, MOFFATT COUNTY, COLO. (Not occupied.)**

A geologist's flag on sandy, partly bare hill, about 5 miles south of the mouth of Deals Gulch and 5.5 miles southwest of Pagoda post office, on the divide between Williams River and Badger Gulch.

Signal and station mark: Flag in tree.

\* [Latitude 40° 17' 54.2". Longitude 107° 28' 24.3".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	<i>Log. meters.</i>	<i>Miles.</i>
Buck.....	186 29 04	6 29 52.4	4.19195	.....
Williams.....	235 18 34	55 22 40	4.03620	.....

**GNAT, ROUTT COUNTY, COLO. (Not occupied.)**

On a low bare hill about 3 miles southeast of the Breeze Valley settlement, about 3 miles south of Yampa River, and 7 or 8 miles southwest of Hayden. The road from Breeze Valley to Hayden passes about three-quarters of a mile south of the station.

Signal and station mark: Cairn 6 feet high, in center of which was erected a flagpole.

[Latitude 40° 27' 08.8". Longitude 107° 23' 27.7".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	<i>Log. meters.</i>	<i>Miles.</i>
Williams.....	349 56 27	169 57 20	4.04512	.....
Buck.....	72 32 59	252 30 35	3.73928	.....
Hayden.....	226 30 58	46 34 40	4.04412	.....
Baerl.....	306 27 56	126 34 27	4.24765	.....

**HAYDEN, ROUTT COUNTY, COLO.**

On a ridge about 2 miles northwest of Hayden. The public road from Hayden north to the Elkhead country passes 0.8 mile east of the station; keep this road to top of ridge, where a gate will be found and a second-class road to the northeast; keep this road to point near top of small rise, then turn south and follow a wire fence. Station is about 200 yards southwest of point where this fence makes a sharp angle to the northwest.

Signal: A quadripod of sawed lumber with flags.

Station mark: An 8 by 8 by 24 inch sandstone block with a bench-mark tablet centered under signal.

[Latitude 40° 31' 15.56". Longitude 107° 17' 46.50".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	<i>Log. meters.</i>	<i>Miles.</i>
Williams.....	18 15 22.89	198 12 34.84	4.2904203	.....
Buck.....	55 08 20.32	235 02 14.68	4.2089395	.....
Cedar.....	103 16 30.59	283 04 21.88	4.4327879	.....
Twenty Mile.....	300 23 06.37	120 31 02.70	4.3021408	.....
Baerl.....	341 12 10.37	161 15 00.05	4.2823334	.....

**NATURAL, MOFFATT COUNTY, COLO. (Not occupied.)**

On a sharp rise in ridge between Deals Gulch and first canyon to the east and about 2 miles southwest of Buck triangulation station.

Signal and station mark: Flag in tree.

[Latitude 40° 25' 02.0". Longitude 107° 28' 20.7".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	<i>Log. meters.</i>	<i>Miles.</i>
Cedar.....	147 07 00	327 01 45	4.32398	.....
Buck.....	216 27 35	36 28 21	3.44940	.....
A.....	308 49 40	128 52 18	3.86578	.....

**PINNACLE, ROUTT COUNTY, COLO.**

On Pinnacle Mountain, on divide between Trout Creek on the north and Oak Creek on the south. Peak is well known, being very sharp and well defined. The road from Dunkley via Pinnacle to Yampa and Oak Creek passes around the mountain on the south. There are numerous ways of ascending the Pinnacle, but one had better inquire the way as the fences are constantly being changed and a gap or gate would be more convenient, or meadows are apt to be flooded and impassable. Pinnacle school house is on the road 0.8 mile southwest of station. Animals were ridden to the top by going along the north and east slopes.

Signal: A pole quadripod with flags.

Station mark: Bench-mark tablet in solid rock centered under signal. Over mark was built a rock cairn 4 feet high.

[Latitude 40° 13' 59.22". Longitude 107° 04' 00.13".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	<i>Log. meters.</i>	<i>Miles.</i>
Williams.....	117 44 27.61	297 32 45.64	4.4015160	.....
Baeirl.....	136 04 49.14	315 58 43.90	4.2858827	.....
Twenty Mile.....	174 17 09.10	354 16 09.20	4.3406890	.....

**SAGE WILLOW, ROUTT COUNTY, COLO. (Not occupied.)**

No description available,

[Latitude 40° 19' 50.4". Longitude 107° 14' 28.4".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	<i>Log. meters.</i>	<i>Miles.</i>
Williams.....	103 34 27	283 29 27	4.04525	.....
Baeirl.....	206 36 27	26 37 08	3.52503	.....

**SPRUCE, ROUTT COUNTY, COLO. (Not occupied.)**

On or near the west end of east and west ridge on divide between the waters of Williams Fork and Willow Creek, about 7 miles southeast of Pagoda post office.

Signal and station mark: A tall very prominent spruce tree.

[Latitude 40° 15' 04.6". Longitude 107° 22' 13.9".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	<i>Log. meters.</i>	<i>Miles.</i>
Buck.....	161 22 44	341 19 32	4.33920	.....
Williams.....	180 58 54	0 59 00	4.05742	.....

**TWENTY MILE, ROUTT COUNTY, COLO.**

On the highest point of divide between Grassy Creek on the west, Fish Creek on the southeast, and Yampa River on the north. Station overlooks the Twenty-mile Park and is about 4 miles southeast of Harris on the Moffat railroad. The road from Hayden and Harris up Grassy Creek passes about 3 miles west of the station; leave this road near the 10-mile post to Hayden and follow second-class road through what is locally known as the Forest Culture. Keep this road till an old deserted house is reached about 1.25 miles from main road. Follow woods roads leading from the house east up a canyon or continue south through pasture until a large canyon to east is reached. An old road leads up this canyon about 2 miles. Wagon was taken to a point about 1 mile north of station, thence the top was reached by saddle along cow trails.

Signal: Pole quadripod with flags.

Station mark: Bench-mark tablet in 8 by 10 by 24 inch sandstone block centered under signal.

[Latitude 40° 25' 46.10". Longitude 107° 05' 32.69".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	Log. meters.	Miles.
Baeirl.....	54 25 58.26	234 20 52.26	4.136667	.....
Williams.....	70 24 34.93	250 13 51.52	4.395787	.....
Hayden.....	120 31 02.70	300 23 06.37	4.3021408	.....
Pinnacle.....	354 16 09.20	174 17 09.10	4.3406890	.....

**WILLIAMS, ROUTT COUNTY, COLO.**

On about highest point of divide between Bear River and Williams River, on a line between Hayden and Pagoda post office. It is about 4.5 miles northeast from Pagoda and 10 or 12 miles from Hayden. Animals can be ridden to station from either place and the signal can be seen from Hayden, but not from Pagoda.

Signal: A quaking asp tree securely supported by poles.

Station mark: A triangulation tablet set in rock at base of tree.

[Latitude 40° 21' 14.57". Longitude 107° 22' 05.58".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	Log. meters.	Miles.
Peak (U).....	1 54 40.73	181 54 16.65	4.4227248	16.447
Sleepy Cat (U).....	29 08 43.55	209 02 31.96	4.4465285	17.373
Devils Hole (U).....	67 22 31.70	247 01 54.86	4.6905796	30.474
Brush (U).....	73 09 13.08	252 47 57.21	4.6878817	30.285
Juniper (U).....	100 51 07.55	280 25 26.18	4.7563393	35.456
Cedar (U).....	140 40 07.40	320 30 48.08	4.5049183	19.873
Welba (U).....	180 32 39.95	0 32 52.49	4.6773808	29.562
Bears Ears (U).....	192 07 02.50	12 11 42.54	4.6822060	29.892
Pilot (U).....	214 24 37.96	34 35 02.69	4.6019532	24.849
Pagoda (U).....	352 45 29.34	172 46 51.82	4.3797352	14.897
Spruce (K).....	0 59 00	180 58 54	4.05747	.....
Geologist (K).....	55 22 40	235 18 34	4.03620	.....
Cabin (K).....	120 18 08	300 12 37	4.14522	.....
A (K).....	127 35 28	307 34 03	3.59638	.....
Cedar (K).....	140 40 07.40	320 30 48.08	4.5049183	.....
Buck (K).....	142 19 10.84	322 15 53.73	4.0692085	.....
Hayden (K).....	198 12 34.84	18 15 22.89	4.2904203	.....
Fire House (K).....	210 41 30	30 45 49	4.26561	.....
Twenty Mile (K).....	250 13 51.52	70 24 34.93	4.3956787	.....
Baeirl (K).....	268 05 29.84	88 11 07.00	4.0896743	.....
Sage Willow (K).....	283 29 27	103 34 27	4.04525	.....
Pinnacle (K).....	297 32 45.64	117 44 27.61	4.4615160	.....

NOTE.—U=values obtained by C. F. Urquhart in 1910; K=values obtained by C. B. Kendall in 1915.



## COLORADO AND UTAH.

### TRIANGULATION STATIONS.

Cameo, Coventry, Delta, Gateway, Grand Junction, Lone Cone, Mount Peale, Mount Waas, and Naturita quadrangles.

DELTA, GARFIELD, HINSDALE, MESA, MONTROSE, AND SAN MIGUEL COUNTIES, COLO.;  
GRAND AND SAN JUAN COUNTIES, UTAH.

During the season of 1914 C. F. Urquhart extended triangulation east and south from Coast and Geodetic Survey primary stations Tavaputs and Mount Waas, and secondary stations Chiquita, Mesa, and Mams Peak. He occupied 15 new stations and located 7 points by intersections, the positions for which are on North American datum.

#### CHIUQUITA, MESA COUNTY, COLO.

Described by United States Coast and Geodetic Survey in Special Publication 19. About 12 miles south-southwest from Grand Junction, on the northern rim or brow of Piñon Mesa. The station is marked by a low brick pier used in mounting the instrument.

[Latitude  $38^{\circ} 54' 38.264''$ . Longitude  $108^{\circ} 39' 06.632''$ .]

To station—	Azimuth.			Back azimuth.			Distance.	
	°	'	"	°	'	"	Log. meters.	Miles.
Glade.....	139	27	36.64	319	24	09.67	4.0859796	7.574
Piñon.....	154	19	42.96	334	16	06.20	4.2814780	11.880
Tavaputs.....	156	30	45.30	336	17	20.60	4.8822167	47.377
Indian.....	211	41	17.58	31	45	53.81	4.3030700	12.486
Ray.....	215	14	16.30	35	32	32.34	4.8568205	44.686
Grand.....	245	38	46.06	65	53	49.24	4.5786049	23.548
Mesa.....	271	26	06.85	91	43	56.10	4.6131895	25.500
Uncompahgre.....	311	30	37.28	132	15	04.29	5.1444994	86.666

#### COKE, MONTROSE COUNTY, COLO.

Station is on a rather prominent hill covered with cedar and piñon trees about 3 miles southwest of the coke ovens on road between Naturita and Paradox. It is just above and on the north side of Basin Creek Canyon. Can be reached on horseback from the coke ovens or from the Wheeler & Lavender ranch, known as the Spectacle ranch. Better traveling from the latter, but about 6 miles farther.

Signal: A cairn 6 feet high on highest point of peak.

Station mark: A bronze tablet set in solid rock under center of cairn.

[Latitude 38° 11' 17.269". Longitude 108° 40' 20.549".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	<i>Log. meters.</i>	<i>Miles.</i>
Blue Mountain.....	61 05 52.13	240 36 41.28	4.8998385	49.339
Gypsum.....	72 19 35.21	252 13 37.64	4.1698860	9.188
Mount Peale.....	119 55 09.93	299 34 28.33	4.7484857	34.821
Mount Waas.....	128 57 37.33	308 36 57.41	4.7939472	38.663
Pace.....	138 11 21.95	317 56 18.70	4.7231679	32.849
Skinout.....	142 58 46.23	322 48 38.46	4.5961040	24.516
Montpelier.....	182 57 25.65	2 58 22.82	4.6355230	26.846
Tree.....	208 27 34.02	28 33 53.35	4.4933578	19.351
Nucla.....	229 46 36.30	49 51 18.46	4.1618449	9.020
Uncompahgre.....	276 33 43.92	97 18 35.28	4.0291535	66.451
Lone Cone.....	312 08 09.61	132 23 35.53	4.6947394	30.767
Young.....	321 31 38.32	141 36 34.15	4.2736658	11.669
North Mountain.....	322 14 44.62	142 24 44.54	4.5892113	24.130
Lavender.....	329 29 48.92	149 36 30.98	4.4964885	19.491

**FIR, MESA COUNTY, COLO.**

On about the highest point of a flat-topped peak in the Fruita Reserve, on the summit of Piñon Mesa. It is about 5 miles north of Mr. Silzell's ranch, in Unaweep Canyon, and can be reached from there by trail. The flat ridge east of peak can not be seen over and is probably a little higher, but can not be used for station on account of dense growth of timber. There is a road from Glade Park post office to foot of peak.

Signal and station mark: A spruce or fir tree about 50 feet high, trimmed up.

Reference mark: A triangulation tablet set in rock 81.5 feet from tree.

True azimuth tree to tablet: 238° 23'.

[Latitude 38° 49' 44.524". Longitude 108° 48' 10.768".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	<i>Log. meters.</i>	<i>Miles.</i>
Pace.....	36 53 34.28	216 43 18.57	4.5992107	24.692
Mount Waas.....	49 04 18.25	228 48 23.50	4.6898898	30.426
Tavaputs.....	167 34 29.77	347 26 49.56	4.9076281	50.232
Piñon.....	190 20 45.25	10 22 50.72	4.4268648	16.604
Spruce.....	191 16 24.91	11 23 09.84	4.8938909	48.668
Ray.....	218 45 55.97	39 09 54.47	4.9397753	54.091
Mams or North Mam.....	323 20 17.97	52 55 46.53	4.0086546	63.388
Grand.....	242 31 43.43	62 52 27.81	4.7296484	33.343
Uncompahgre.....	305 15 14.16	126 05 17.16	5.1587892	89.565
Montpelier.....	334 03 47.58	154 09 39.18	4.4930338	19.337

**GLADE, MESA COUNTY, COLO. (Not occupied.)**

Station mark and signal: Cupola on schoolhouse at Glade Park post office, on Piñon Mesa, 18 miles from Grand Junction.

[Latitude 38° 59' 38.534". Longitude 108° 44' 35.849".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	<i>Log. meters.</i>	<i>Miles.</i>
Piñon.....	177 21 21.17	357 21 11.53	3.9018469	4.957
Chiquita.....	319 24 09.67	139 27 36.64	4.0859796	7.574

**GRAND, MESA COUNTY, COLO.**

Station is near northwest corner of Grand Mesa and built near rim rock. A very short distance can be seen in country between Ray and Mesa.

Station mark: A triangulation tablet set under center of cairn 9 feet high.



[Latitude 39° 03' 02.597". Longitude 108° 15' 10.867".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	Log. meters.	Miles.
Lone Cone.....	0 04 34.35	180 04 30.00	5.1107742	80.191
Tree.....	17 40 09.55	197 30 47.70	4.8557726	44.578
Montpelier.....	33 09 11.40	212 54 22.87	4.7975940	38.989
Mount Waas.....	56 27 17.54	235 50 39.97	5.0082586	63.330
Fir.....	62 52 27.81	242 31 43.43	4.7296484	33.343
Chiquita.....	65 53 49.24	245 38 46.06	4.5786049	23.548
Piñon.....	92 23 52.46	272 05 10.68	4.6318248	26.618
Indian.....	93 45 44.97	273 35 16.94	4.3804724	14.922
Tavaputs.....	130 09 56.19	309 41 20.97	4.9275225	52.586
Spruce.....	148 31 53.36	328 17 45.60	4.7871970	38.067
Ray.....	189 26 00.89	9 29 10.24	4.6401779	27.135
Mesa.....	338 55 47.42	158 58 35.20	4.2523450	11.110

## GYPSUM, SAN MIGUEL COUNTY, COLO.

Near the San Miguel and Montrose county line, and near the west end of Dry Creek basin, 10 or 11 miles west of the Wheeler & Lavender "Spectacle ranch." The only available water is at this ranch. There is a wagon road through Dry Creek basin to foot of ridge on which station is located. Very easy to reach on horseback.

Signal: A piñon tree braced up by small cairn and poles.

Station mark: A triangulation tablet set in solid rock under center of signal.

[Latitude 38° 08' 51.270". Longitude 108° 49' 59.175".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	Log. meters.	Miles.
Blue Mountain.....	58 27 29.46	238 04 15.60	4.8126661	40.366
Mount Peale.....	133 09 13.86	312 54 31.39	4.6752488	29.417
Pace.....	154 10 05.81	334 01 01.94	4.6877436	30.276
Skinout.....	164 51 58.94	344 47 50.14	4.5713203	23.156
Montpelier.....	198 48 35.46	18 55 31.72	4.7020262	31.288
Coke.....	252 13 37.64	72 19 35.21	4.1698860	9.188
Uncompahgre.....	273 34 39.57	94 25 26.82	5.0812755	74.925
Young.....	291 31 02.80	111 41 55.54	4.4428244	17.226
Lone Cone.....	299 23 16.11	119 44 37.99	4.7661750	36.268
North Mountain.....	304 35 43.36	124 51 39.48	4.6632763	28.617
Lavender.....	306 48 22.67	127 01 01.15	4.5743960	23.321

## INDIAN, MESA COUNTY, COLO.

Water tank at abandoned Indian school about 2 miles east of Grand Junction.

Station mark: A pipe extending into the ground under center of tank. A rock with triangulation tablet set in it was placed in ground 2.4 feet from pipe.

True azimuth pipe to tablet: 238° 11'.

[Latitude 39° 03' 52.516". Longitude 108° 31' 47.585".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	Log. meters.	Miles.
Chiquita.....	31 45 53.81	211 41 17.58	4.3030700	12.488
Piñon.....	90 29 01.90	270 20 48.09	4.2750492	11.706
Tavaputs.....	142 18 07.10	322 00 02.96	4.8250258	41.531
Grand.....	273 35 16.94	93 45 44.97	4.3804724	14.922
Mesa.....	300 49 28.16	121 02 42.99	4.5496952	22.030

## LAVENDER, SAN MIGUEL COUNTY, COLO.

On north rim of steep bluff overlooking the Wheeler & Lavender ranch (Desert claim). There is a wagon road from Narutita or Norwood to this ranch. Animals can be ridden from ranch to station. Distance about 3 miles.

Signal: An aspen tree braced by poles.

Station mark: A triangulation tablet set in rock at center of signal.

NOTE.—This station should not be used for extending triangulation, as its position is not very accurate.

[Latitude 37° 56' 40.182". Longitude 108° 29' 28.462".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	Log. meters.	Miles.
Gypsum.....	127 01 01.15	306 48 22.67	4.5743960	23.321
Coke.....	149 36 30.98	329 29 48.92	4.4964885	19.491
Young.....	161 07 54.43	341 06 07.99	4.1150605	8.099
North Mountain.....	295 11 46.10	115 15 03.56	3.9381745	5.389

## LEON, DELTA-MESA COUNTY LINE, COLO.

On summit of Leon Peak on the Delta-Mesa county line. A well-known peak at the head of Big Creek, about 11 miles south and 6 miles east of Collbron station, is in T. 11 S., R. 94 W., near east edge of sec. 24, and can be easily reached by wagon road from Collbron up Big Creek via Big Creek ranger station to sawmill, thence by ranger's trail to summit. Animals can be ridden to foot of peak about 0.25 mile northwest of summit. Good feed and water.

Signal: Center of cupola of Forest Service lookout house.

Station mark: A standard bronze tablet set in large boulder under center of cupola of Forest Service lookout house 10 feet square. House built of wood and tin and painted white.

[Latitude 39° 04' 46.864". Longitude 107° 50' 37.173".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	Log. meters.	Miles.
Montpelier.....	51 34 42.85	231 04 30.03	4.9510016	55.508
Mount Waas.....	63 54 32.75	243 02 30.82	5.1281457	83.463
Tavaputs.....	117 23 25.93	296 39 16.54	5.0510402	69.886
Spruce.....	126 15 03.97	305 45 22.51	4.9206805	51.764
Ray.....	144 51 59.03	324 39 35.84	4.6884371	30.324
Mams.....	176 49 08.25	356 48 18.18	4.5332803	21.214

## LONE CONE, SAN MIGUEL-DOLORES COUNTY LINE, COLO. (Not occupied.)

Station and signal is a small cairn on summit of Lone Cone, a very prominent peak in southeastern part of San Miguel County.

[Latitude 37° 53' 17.156". Longitude 108° 15' 17.892".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	Log. meters.	Miles.
North Mountain.....	101 15 28.36	281 10 03.22	4.1200279	8.192
Gypsum.....	119 44 37.99	299 23 16.11	4.7661750	36.268
Young.....	126 44 45.32	306 34 15.62	4.4933102	19.349
Mount Waas.....	130 37 28.93	310 01 23.53	5.0480353	69.404
Coke.....	132 23 35.53	312 08 09.61	4.6947394	30.767
Pace.....	135 31 08.88	315 00 39.00	5.0096106	62.527
Nucula.....	149 12 56.30	329 02 10.73	4.6964660	30.890
Montpelier.....	155 57 07.85	335 42 34.89	4.9232069	52.066
Grand.....	180 04 30.00	0 04 34.35	5.1107742	80.191
Mesa.....	183 21 35.98	3 24 26.01	5.0514019	69.944

**MAMS PEAK OR NORTH MAM, GARFIELD COUNTY, COLO.**

On summit of the North Mam Peak, the highest point of the Battlement Mesa, about 10 miles south and 5 miles west of Rifle, from which point it can be easily reached by wagon road up Beaver Creek to Fondett's ranch and thence by trail till peak first shows on the right. The best way from this point is to turn nearly north and approach the peak from the northeast side. Animals can be ridden to foot of peak on northeast side about 0.25 mile from summit.

Signal: A cairn 6 feet high with 10-foot pine pole in center.

Station mark: A bronze tablet set in stone and placed in crevice of rock and over which was built a cairn 6 feet high.

[Latitude 39° 23' 12.259". Longitude 107° 51' 56.336".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	Log. meters.	Miles.
Mount Waas.....	51 52 12.76	231 00 50.17	5.1787597	93.780
Fir.....	52 55 46.53	232 20 17.97	5.0086546	63.388
Tavaputs.....	100 12 10.38	279 28 42.67	4.9980190	61.854
Ray.....	102 31 10.88	282 19 35.52	4.4286119	16.671
Spruce.....	103 04 14.03	282 35 17.06	4.8262464	41.648
Leon.....	356 48 18.18	176 49 08.25	4.5332803	21.214

**MAMS PEAK, GARFIELD COUNTY, COLO.**

[Location from Pelham, Hahn, and Bridger: Latitude 39° 23' 11.71"; longitude 107° 51' 55.98".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	Log. meters.	Miles.
Lincoln.....	56 35 58.74	236 17 30.75	4.7021508	31.297
Meade.....	84 08 20.72	263 50 06.11	4.6184718	25.812
Ray.....	102 31 36.59	282 20 00.98	4.4287787	16.677
Cathedral.....	123 01 08.21	302 34 59.83	4.8447632	43.462
Colorow.....	163 13 42.67	343 01 42.27	4.9652048	57.353
Petrolite.....	167 58 25.44	347 53 01.05	4.7632344	36.023
Rio Blanco.....	173 20 40.76	353 18 45.36	4.5710313	23.141
Sleepy Cat.....	199 06 35.44	19 19 32.69	4.9439031	54.608

**MESA, DELTA COUNTY, COLO.**

Described by United States Coast and Geodetic Survey in Special Bulletin 19.

A short distance north of the most western point of that part of the Grand Mesa which is southeast of Connah Creek, within about 40 feet of the edge of the rim rock which limits the mesa.

Station mark: A copper bolt set in the solid lava rock. It is also marked about 10 inches above the ground by a drill hole in a brick embedded in the masonry which fills the space between the bases of the three small brick piers used to support the instrument.

[Latitude 38° 54' 01.482". Longitude 108° 10' 44.122".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	Log. meters.	Miles.
Lone Cone.....	3 24 26.01	183 21 35.98	5.0514019	69.944
Tree.....	28 40 17.42	208 28 09.82	4.7698873	36.580
Montpelier.....	48 42 07.69	228 24 33.68	4.7345514	33.721
Mount Waas.....	66 35 42.37	245 56 21.53	4.9982566	61.888
Chiquita.....	91 43 56.10	271 26 06.85	4.6131895	25.500
Piñon.....	110 37 05.64	290 15 37.86	4.7208265	32.672
Indian.....	121 02 42.99	300 49 28.16	4.5496552	22.030
Tavaputs.....	135 06 52.16	314 35 30.99	5.0029038	62.554
Grand.....	158 58 35.20	338 55 47.42	4.2523450	11.110
Uncompahgre.....	325 32 34.11	145 59 21.22	5.0463212	69.131

## MONTPELIER, MESA COUNTY, COLO.

Station is on ridge known as Uncompahgre Plateau, which divides the waters of Dolores and Gunnison rivers, and south of the Unaweep Canyon. It can be reached by going from Whitewater, a station on the Denver & Rio Grande Railroad, on Gateway road, to source of East Creek, thence up Kelly's dugway to summit of ridge; thence on road to the U. C. C. cattle ranch at source of Mesa Creek. Signal can be seen about 2 miles south of this place. Station is on prominent mountain with aspen trees around the sides; trees cut from the summit. The mountain is sometimes called Uncompahgre Butte.

Signal: A rock cairn 7 feet high.

Station mark: A triangulation tablet under center of cairn.

[Latitude 38° 34' 36.583". Longitude 108° 38' 48.473".]

To station—	Azimuth.	Back azimuth.	Distance.	
			Log. meters.	Miles.
Coke.....	2 58 22.82	182 57 25.65	4.6355230	26.846
Gypsum.....	18 55 31.72	198 48 35.46	4.7020262	31.288
Blue Mountain.....	41 21 55.73	220 51 40.31	5.0358104	67.478
Mount Peale.....	73 21 47.74	253 00 03.49	4.7244604	32.947
Pace.....	84 18 42.82	264 02 38.31	4.5758634	23.400
Mount Waas.....	85 28 23.76	265 06 41.15	4.7056158	31.548
Fir.....	154 09 39.18	334 03 47.58	4.4930338	19.337
Ray.....	203 12 07.95	23 30 08.63	5.0179456	64.758
Grand.....	212 54 22.87	33 09 11.40	4.7975940	38.989
Mesa.....	228 24 33.68	48 42 07.69	4.7345514	33.721
Leon.....	231 04 30.03	51 34 42.85	4.9510016	55.508
Uncompahgre.....	298 02 27.24	118 46 33.14	5.0712622	73.217
Tree.....	321 21 35.76	141 26 59.39	4.3051468	12.546
Lone Cone.....	335 42 34.89	155 57 07.85	4.9232069	52.066
North Mountain.....	343 44 56.88	163 54 02.41	4.8860936	47.802

## NORTH MOUNTAIN, SAN MIGUEL COUNTY, COLO.

On high mountain, well known locally as North Mountain. It is about 7 or 8 miles southeast of the Wheeler & Lavender ranch known as the Desert claim, and 8 miles a little north of west from Lone Cone. It can be reached on horseback from almost any direction, but the best trail is probably from the above ranch.

Signal: An aspen tree left standing.

Reference mark: A tablet set in rock and placed in ground 3 feet from tree.

Azimuth tree to mark: 17° 16'.

[Latitude 37° 54' 40.303". Longitude 108° 24' 07.194".]

To station—	Azimuth.	Back azimuth.	Distance.	
			Log. meters.	Miles.
Blue Mountain.....	85 27 48.32	264 48 45.29	4.9712991	58.163
Lavender.....	115 15 03.56	295 11 46.10	3.9381745	5.389
Gypsum.....	124 51 39.48	304 35 43.36	4.6632763	28.617
Mount Waas.....	134 13 31.95	313 42 53.52	5.0017961	62.395
Pace.....	140 04 25.37	319 39 22.56	4.9620982	56.944
Coke.....	142 24 44.54	322 14 44.62	4.5892113	24.130
Young.....	143 05 05.88	323 00 01.77	4.3022892	12.463
Nucla.....	162 35 32.60	342 30 13.41	4.6236614	26.122
Montpelier.....	163 54 02.41	343 44 56.88	4.8860936	47.802
Tree.....	171 25 13.23	351 21 29.83	4.7691298	36.516
Lone Cone.....	281 10 03.22	101 15 28.36	4.1200279	8.192

## NUCLA, MONTROSE COUNTY, COLO.

Tall flagpole at reservoir in the town of Nucla.

Station mark: A triangulation tablet set in rock at foot of flagpole.

Mark is near road and was used as a bench mark by levelman.

[Latitude 38° 16' 21.046". Longitude 108° 32' 44.591".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	<i>Log. meters.</i>	<i>Miles.</i>
Coke.....	49 51 18.46	229 46 36.30	4.1618449	9.020
Mount Waas.....	116 39 25.78	296 14 01.45	4.8227769	41.317
Pace.....	123 01 48.28	302 42 00.92	4.7420021	34.305
Tree.....	191 51 55.92	11 53 32.67	4.2646589	11.429
Lone Cone.....	329 02 10.73	149 12 56.30	4.6964660	30.890
North Mountain.....	342 30 13.41	162 35 32.60	4.6236614	26.122

**PIÑON, MESA COUNTY, COLO.**

Station is on a piñon and cedar ridge 5 miles north of Glade Park post office on Piñon Mesa. The post office is 18 miles from Grand Junction. The ridge is locally known as Black Ridge. Animals can be ridden to the point.

Signal and station mark: A piñon tree, 25 feet high, with lower limbs cut off.

Reference mark: A triangulation tablet set in solid rock, 6.95 feet from tree.

True azimuth, tree to tablet: 261° 31'.

[Latitude 39° 03' 56.944". Longitude 108° 44' 51.156".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	<i>Log. meters.</i>	<i>Miles.</i>
Fir.....	10 22 50.72	190 20 45.25	4.4288648	16.604
Mount Waas.....	35 38 26.38	215 20 24.09	4.8560394	44.806
Tavaputs.....	157 10 58.45	337 01 10.65	4.7569782	35.508
Spruce.....	191 47 19.51	11 51 59.06	4.7127074	32.067
Ray.....	230 06 58.67	50 28 54.51	4.8116412	40.271
Indian.....	270 20 48.09	90 29 01.90	4.2750492	11.706
Grand.....	272 05 10.68	92 23 52.46	4.6318248	26.618
Mesa.....	290 15 37.86	110 37 05.64	4.7208265	32.672
Chiquita.....	334 16 06.20	154 19 42.96	4.2814780	11.880
Glade.....	357 21 11.53	177 21 21.17	3.9018469	4.957

**RAY, GARFIELD COUNTY, COLO.**

Described in United States Geological Survey Bulletin 551.

On highest point of bald ridge, about 6 miles northeast (air line) from De Beque, a station on the Denver & Rio Grande Railroad. Station can be reached from De Beque by following road to C. H. Conwell's ranch (8 miles), thence by trail up Logan Gulch to its source, thence up mountain to its highest point. The distance from Conwell's to station is 10 miles.

Signal: A fir tree braced by poles.

Station mark: A triangulation tablet set in rock under center of signal.

[Latitude 39° 26' 19.417". Longitude 108° 10' 11.566".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	<i>Log. meters.</i>	<i>Miles.</i>
Grand.....	9 29 10.24	189 26 00.89	4.6401779	27.135
Montpelier.....	23 30 08.63	203 12 07.95	5.0179456	64.758
Chiquita.....	35 32 32.34	215 14 16.30	4.8568205	44.686
Fir.....	39 09 54.47	218 45 55.97	4.9397753	54.091
Piñon.....	50 28 54.51	230 06 58.67	4.8116412	40.271
Spruce.....	103 14 42.21	282 57 20.64	4.6042162	24.979
Mams or North Mam.....	282 19 35.52	102 31 10.88	4.4286119	16.671
Leon.....	324 39 35.84	144 51 59.03	4.6884371	30.324

[Located from Pelham, Hahn &amp; Bridger: Latitude 39° 26' 19.05"; longitude 108° 10' 11.60".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	Log. meters.	Miles.
Grand.....	9 29 39.93	189 26 30.38	4.6402621	27.140
Lincoln.....	25 05 36.57	204 58 41.72	4.5694090	23.055
Low.....	31 52 23.65	211 49 22.59	4.1119505	8.041
Meade.....	56 09 54.42	236 03 14.52	4.2592310	11.287
Cathedral.....	134 40 09.26	314 25 38.15	4.6606689	28.446
Petrolite.....	195 19 03.38	15 25 18.18	4.7226619	32.810
Rio Blanco.....	214 52 47.20	35 02 29.81	4.5807534	23.665
Mams Peak.....	282 20 00.98	102 31 36.59	4.4287787	16.677
Red.....	317 31 03.60	137 36 14.95	4.2406675	10.815

**SKINOUT, MONTROSE COUNTY, COLO. (Not occupied.)**

Station mark and signal: A cone-shaped tree on highest point of Skinout Mountain on east side of Sinbad Valley. This valley can be reached by wagon road from Gateway on Dolores River.

[Latitude 38° 28' 17.811". Longitude 108° 56' 40.521".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	Log. meters.	Miles.
Mount Waas.....	107 01 48.22	286 51 14.56	4.4112776	16.019
Pace.....	124 21 07.42	304 16 11.49	4.1443393	8.663
Coke.....	322 48 38.46	142 58 46.23	4.5961040	24.516
Gypsum.....	344 47 50.14	164 51 58.94	4.5713203	23.156

**SPRUCE, GARFIELD COUNTY, COLO.**

On ridge at the source of Salt Wash and near the tributaries of Roan Creek. There is a round hill one-quarter mile N. 13° W., a little higher and more prominent, but a lone spruce tree on ridge was sighted from Ray and used as signal. All prominent points can be seen from point used.

To reach point from De Beque, go up Roan Creek to Highmore post office, thence up same creek to Mr. Burk's ranch, from which place a trail leads up to summit of cliffs, thence along ridge to source of Salt Wash. Station can be reached from any direction after getting on ridge.

Signal and station mark: A spruce tree 20 feet high.

Reference mark: A triangulation tablet.

True azimuth tree to mark: 218° 36'.

[Latitude 39° 31' 14.865". Longitude 108° 37' 29.752".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	Log. meters.	Miles.
Fir.....	11 23 09.84	191 16 24.91	4.8938909	48.668
Piñon.....	11 51 59.06	191 47 19.51	4.7127074	32.067
Tavaputs.....	93 50 53.62	273 36 22.02	4.5155340	20.365
Mams or North Mam.....	282 35 17.06	103 04 14.03	4.8262464	41.648
Ray.....	282 57 20.64	103 14 42.21	4.6042162	24.979
Leon.....	305 45 22.51	126 15 03.97	4.9206805	51.764
Grand.....	328 17 45.60	148 31 53.36	4.7871970	38.067

**TAVAPUTS, GARFIELD COUNTY, COLO.**

A United States Coast and Geodetic Survey station, described in Special Publication 19.

On the southern edge of the Book Mountains, which in this vicinity consist of low flat ridges sparsely covered with pine and aspen trees. The station is between West

Salt Wash, 3 miles to the southeast, and Bitter Creek, three-fourths mile to the west. Bitter Creek has its source in a fresh-water spring 1.25 miles distant to the north.

Station mark: Copper bolt in a drill hole in solid rock, under a brick in concrete.

Reference marks: At the following distances and azimuths from the station: 2.43 meters,  $74^{\circ} 41'$ ; 2.40 meters,  $196^{\circ} 31'$ ; and 2.43 meters,  $322^{\circ} 12'$ .

[Latitude  $39^{\circ} 32' 23.946''$ . Longitude  $109^{\circ} 00' 19.148''$ .]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	Log. meters.	Miles.
Mount Waas.....	9 53 07.92	189 44 44.55	5.0520834	70.054
Spruce.....	273 36 22.02	93 50 53.62	4.5155340	20.365
North Mam or Mams.....	279 28 42.67	100 12 10.38	4.9980190	61.854
Leon.....	296 39 16.54	117 23 25.93	5.0510402	69.886
Grand.....	309 41 20.97	130 09 56.19	4.9275225	52.586
Mesa.....	314 35 30.99	135 06 52.16	5.0029038	62.554
Indian.....	322 00 02.96	142 18 07.10	4.8250258	41.531
Chiquita.....	336 17 20.59	156 30 45.30	4.8822171	47.377
Piñon.....	337 01 10.65	157 10 58.45	4.7569782	35.508
Fir.....	347 26 49.56	167 34 29.77	4.9076281	50.232

#### TREE, MONTROSE COUNTY, COLO. (Not occupied.)

Signal and station mark: A tree on prominent mountain on Uncompahgre Plateau 12.5 miles southeast of Montpelier station and 11.5 miles north-northeast of Nucla.

[Latitude  $38^{\circ} 26' 04.805''$ . Longitude  $108^{\circ} 30' 08.660''$ .]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	Log. meters.	Miles.
Nucla.....	11 53 32.67	191 51 55.92	4.2646589	11.429
Coke.....	28 33 53.35	208 27 34.02	4.4933578	19.351
Mount Waas.....	100 37 48.25	280 10 44.16	4.8082458	39.957
Pace.....	103 36 20.07	283 14 53.55	4.7118665	32.005
Montpelier.....	141 26 59.39	321 21 35.76	4.3051468	12.546
Grand.....	197 30 47.70	17 40 09.55	4.8557726	44.578
Mesa.....	208 28 09.82	28 40 17.42	4.7698873	36.580
North Mountain.....	351 21 29.83	171 25 13.23	4.7691298	36.516

#### UNCOMPAHGRE, HINSDALE COUNTY, COLO.

Described in United States Coast and Geodetic Survey Special Publication 19.

On summit of Uncompahgre Peak on north side about 10 feet from edge of perpendicular cliff of which this side of mountain consists. The summit is inaccessible except from south side. Lake City, the terminus of a branch of the Denver & Rio Grande Railroad, leaving the main road at Sapinero, distant about 8 miles air line, southeast of peak, is nearest and most convenient railroad town.

Station mark: A crosscut in top of a half-inch copper bolt leaded into solid rock. The surface mark is a half-inch hole in a brick cemented into top of masonry foundation pier, for theodolite, built around and over station bolt. Top of brick is 4 inches above bolt. The usual circular stone ring wall, inner diameter 11 feet, concentric with station bolt, was left standing.

Reference marks: Consist of four drill holes in solid rock, filled with lead—one south  $89^{\circ} 58'$  west, distant 9.35 feet; one north  $0^{\circ} 11'$  west, distant 8.71 feet; one north  $89^{\circ} 56'$  west, distant 9.4 feet; and one south  $3^{\circ} 37'$  west, distant 8.12 feet, from the geodetic point. The brick latitude pier, bearing south  $54^{\circ} 05'$  east, distant 50.11 feet, and the stone pendulum house, bearing south  $28^{\circ} 26'$  east, distant 134.15 feet, were also left standing.

[Latitude 38° 04' 18.387". Longitude 107° 27' 41.707".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	Log. meters.	Miles.
Sneffels.....	75 32 46.6	255 20 34.1	4.4764217	.....
Gypsum.....	94 25 26.82	273 34 39.57	5.0812755	74.925
Coke.....	97 18 35.28	276 33 43.92	5.0291535	66.451
Horsefly.....	108 20 41.92	288 03 18.17	4.6368392	26.927
Mount Waas.....	109 07 06.12	288 01 25.77	5.2119946	101.238
Montpelier.....	118 46 33.14	298 02 27.24	5.0712622	73.217
Fir.....	126 05 17.16	305 15 14.16	5.1587892	89.565
Chiquita.....	132 15 04.29	311 30 37.28	5.1444994	86.666
Mesa.....	145 59 21.22	325 32 34.11	5.0463212	69.131
Castle Rock.....	150 27 16.65	330 20 45.12	4.4940878	19.384
Sapinero.....	192 30 48	12 35 11	4.67609	.....
Treasury Mountain.....	196 43 01.82	16 56 36.24	5.0387020	.....
Cebolla.....	206 29 35	26 38 28	4.67002	.....
Mount Ouray.....	249 49 54.38	70 35 52.02	5.0611148	.....
San Luis.....	281 16 05.02	101 35 42.15	4.6770430	.....
Lake.....	282 30 36.9	102 38 39.2	4.2813527	.....
La Garita.....	287 11 57.80	107 34 53.28	4.7568771	.....
Bristol.....	310 41 43.10	130 56 43.65	4.6746191	.....
South River.....	322 24 10.27	142 41 50.92	4.8424016	.....
Sherman.....	348 59 42.2	169 01 03.2	4.2261074	.....
Pyramid.....	351 57 49.33	172 00 23.20	4.6427600	.....
Agency.....	.....	.....	4.75408	.....

## YOUNG, SAN MIGUEL COUNTY, COLO.

Windmill tower in C. B. Young's yard. Mr. Young's ranch is the only place of any consequence in Dry Creek basin and is about 13 miles south of Naturita.

Station mark: A triangulation tablet set in rock and placed 3 inches under the surface of the ground under the center of tower. (It is possible that another well may be bored and the tower moved a few feet.)

[Latitude 38° 03' 20.162". Longitude 108° 32' 21.346".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	Log. meters.	Miles.
Gypsum.....	111 41 55.54	291 31 02.80	4.4428244	17.226
Coke.....	141 36 34.15	321 31 38.32	4.2736658	11.669
Lone Cone.....	306 34 15.62	126 44 45.32	4.4933102	19.349
North Mountain.....	323 00 01.77	143 05 05.88	4.3022892	12.463
Lavender.....	341 06 07.99	161 07 54.43	4.1150605	8.099

## BLUE MOUNTAIN, SAN JUAN COUNTY, UTAH. (Not occupied.)

This mountain is known as Blue Mountain, but called Abajo Peak on land office map. About the highest peak was located.

[Latitude 37° 50' 22.968". Longitude 109° 27' 43.469".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	Log. meters.	Miles.
Pace.....	203 17 26.62	23 31 44.60	4.9293889	52.813
Montpelier.....	220 51 40.31	41 21 55.73	5.0358104	67.478
Gypsum.....	238 04 15.60	58 27 29.46	4.8126661	40.366
Coke.....	240 36 41.28	61 05 52.13	4.8998385	49.339
North Mountain.....	264 48 45.29	85 27 48.32	4.9712991	58.163



**MOUNT PEALE, SAN JUAN COUNTY, UTAH. (Not occupied.)**

Station and signal is a rock cairn on the highest point of Mount Peale, which is the highest peak of the La Sal Range. The peak is on the south side of the La Sal Range.

[Latitude 38° 26' 19.048". Longitude 109° 13' 43.237".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	<i>Log. meters.</i>	<i>Miles.</i>
Mount Waas.....	180 36 48.49	0 36 51.56	4.0482451	6.944
Pace.....	228 58 51.16	49 04 31.86	4.2447974	10.918
Montpelier.....	253 00 03.49	73 21 47.74	4.7244604	32.947
Coke.....	299 34 28.33	119 55 09.93	4.7484857	34.821
Gypsum.....	312 54 31.39	133 09 13.86	4.6752488	29.417

**PACE, GRAND COUNTY, UTAH.**

Station is on the east end of a timber-covered ridge just above and west of Sinbad Valley. There is a rough wagon road from Paradox to Castleton, Utah, passing the Buckeye reservoir, Geyser reservoir, Roberson's summer ranch, and the Taylor ranch. Station is 2 or 3 miles northeast of Taylor's ranch. Mr. Pace has a ranch on Rock Creek about 1 mile below Taylor's, which is south of station. There is another road (almost abandoned) passing to north of station, from the source of Rock Creek to Sinbad Valley and thence to Gateway, on Dolores River. Animals can be ridden to point from any direction.

Signal and station mark: A pine tree about 50 feet high with lower limbs cut off.

Reference mark: A triangulation tablet set in solid rock 10.7 feet from tree.

Azimuth tree to tablet: 88° 45'.

[Latitude 38° 32' 32.694". Longitude 109° 04' 35.821".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	<i>Log. meters.</i>	<i>Miles.</i>
Blue Mountain.....	23 31 44.60	203 17 26.62	4.9293889	52.813
Mount Peale.....	49 04 31.86	228 58 51.16	4.2447974	10.918
Mount Waas.....	88 32 05.16	268 26 27.16	4.1186746	8.166
Fir.....	216 43 18.57	36 53 34.28	4.5992107	24.692
Montpelier.....	264 02 38.31	84 18 42.82	4.5758634	23.400
Tree.....	283 14 53.55	103 36 20.07	4.7118665	32.005
Nucla.....	302 42 00.92	123 01 48.28	4.7420021	34.305
Skinout.....	304 16 11.49	124 21 07.42	4.1443393	8.663
Lone Cone.....	315 00 39.00	135 31 08.88	5.0096106	63.527
Coke.....	317 56 18.70	138 11 21.95	4.7231679	32.849
North.....	319 39 22.56	140 04 25.37	4.9620982	56.944
Gypsum.....	334 01 01.94	154 10 05.81	4.6877436	30.276

**MOUNT WAAS, GRAND COUNTY, UTAH.**

Described in United States Coast and Geodetic Survey Special Publication 19.

On the highest point of Mount Waas, which is the third prominent peak from the north end of the La Sal Mountains.

Station mark: A cross in a copper bolt which is set in a drill hole in the rock between the bases of three small brick piers used for mounting the instrument. The station is surrounded by a ring wall of rocks 4 feet high with an inner diameter of 10 feet.

Reference marks: Four reference marks, each probably consisting of a drill hole in the rock, are just outside the wall at the following distances and azimuths from the station: 2.24 meters, 3° 58'; 2.29 meters, 104° 19'; 2.18 meters, 186° 37'; and 2.21 meters 275° 45'. Mount Waas astronomic station, marked by a concrete pier, is 28.213 meters from the station in azimuth about 329°.

[Latitude 38° 32' 21.44". Longitude 109° 13' 38.30'.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	<i>Log. meters.</i>	<i>Miles.</i>
Mount Peale.....	0 36 51.56	180 36 48.49	4.0482451	6.944
Tavaputs.....	189 44 44.32	9 53 07.69	5.0520834	70.054
Piñon.....	215 20 24.09	35 38 26.38	4.8560394	44.606
Fir.....	228 48 23.50	49 04 18.25	4.6898898	30.426
Mams or North Mam.....	231 00 50.17	51 52 12.76	5.1787597	93.780
Grand.....	235 50 39.97	56 27 17.54	5.0082586	63.330
Leon.....	243 02 30.82	63 54 32.75	5.1281457	83.463
Mesa.....	245 56 21.53	66 35 42.37	4.9982566	61.888
Montpelier.....	265 06 41.15	85 28 23.76	4.7056158	31.548
Pace.....	268 26 27.16	88 32 05.16	4.1186746	8.166
Tree.....	280 10 44.16	100 37 48.25	4.8082458	39.957
Skinout.....	286 51 14.56	107 01 48.22	4.4112776	16.019
Uncompahgre.....	288 01 25.77	109 07 06.12	5.2119946	101.238
Nucla.....	296 14 01.45	116 39 25.78	4.8227769	41.317
Coke.....	308 36 57.41	128 57 37.33	4.7939472	38.663
Lone Cone.....	310 01 23.53	130 37 28.93	5.0480353	69.404
North Mountain.....	313 42 53.52	134 13 31.95	5.0017961	62.395

## UTAH.

### TRIANGULATION STATIONS.

#### Marsh Peak and Vernal quadrangles.

##### UINTA COUNTY.

During the season of 1913 Oscar Jones extended triangulation southward from Little Mountain and Marsh Peak, described in Bulletin 181, in order to control the Vernal quadrangle. Eleven stations were occupied and four points were located by intersection, on North American datum.

##### B. M., UINTA COUNTY, UTAH. (Not occupied.)

Station on a high bluff south side of Green River, 6 miles northeast of Ouray.

Station mark: A bench-mark tablet in bowlder marked "B. M. 5071 V. A."

[Latitude 40° 10' 36.44". Longitude 109° 36' 23.11".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	<i>Log. meters.</i>	<i>Miles.</i>
Ouray.....	68 45 37.23	248 39 29.30	4.1611829	9.00
Halfway.....	152 47 58.25	332 44 48.84	4.3024880	12.47
White.....	359 05 54.93	179 05 58.63	3.9360875	5.36

##### CONE, UINTA COUNTY, UTAH.

On a high, very sharp cone-shaped butte 7 miles west of Ouray.

Signal: Cairn over station.

Station mark: A flat sandstone bowlder in which is drilled a 1-inch hole and marked "U. S. 53° 26'. G. S."

[Latitude 40° 06' 05.59". Longitude 109° 50' 13.15".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	<i>Log. meters.</i>	<i>Miles.</i>
Randlett.....	194 21 01.61	14 22 47.29	4.1937695	9.70
Halfway.....	201 41 02.58	21 45 47.60	4.4502309	17.52
Vernal.....	218 30 09.70	38 41 22.87	4.5964331	24.53
Ouray.....	243 16 13.64	63 19 00.83	3.8374573	4.28
White.....	270 43 33.27	90 52 31.61	4.2966286	12.30
Nipple.....	282 10 17.18	102 20 36.02	4.3674429	14.48

##### DEEP CREEK, UINTA COUNTY, UTAH. (Not occupied.)

On southwest end of high ridge 1 mile northeast of Taft post office, one-fourth mile west of Deep Creek.

Station mark: A large cairn.

62510°—Bull. 644—17—8

## 108 TRIANGULATION AND PRIMARY TRAVERSE, 1913-1915.

[Latitude 40° 24' 42.85". Longitude 109° 47' 17.90'']

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	<i>Log. meters.</i>	<i>Miles.</i>
Vernal.....	279 54 38	100 04 00	4.3171666	12.90
Halfway.....	322 44 58	142 47 51	4.0161607	6.45

## HALFWAY, UINTA COUNTY, UTAH.

On a table-top butte, 14 miles southwest of Vernal, 2 miles northwest of crossing of Vernal and Fort Duchesne wagon road with Halfway Hollow.

Station mark: Tablet in bowlder.

Signal and reference mark: Cairn, distance 3.5 feet, true azimuth 67° 11'.

[Latitude 40° 20' 14.91". Longitude 109° 42' 51.74'']

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	<i>Log. meters.</i>	<i>Miles.</i>
Ouray.....	10 33 44.79	190 31 47.27	4.3711066	14.60
Cone.....	21 45 47.60	201 41 02.58	4.4502309	17.52
Randlett.....	30 41 05.85	210 38 06.34	4.1092074	7.99
Roosevelt.....	69 44 48.52	249 36 27.71	4.2899423	12.11
Deep Creek.....	142 47 50.82	322 44 58.40	4.0161607	6.45
Taft.....	146 23 29.13	326 20 16.21	4.1030978	7.88
Vernal.....	251 43 52.27	71 50 21.23	4.1737941	9.27
B. M.....	332 43 48.84	152 47 58.25	4.3024880	12.47
Nipple.....	338 24 45.72	158 30 21.18	4.5248155	20.80
White.....	340 33 37.23	160 37 51.86	4.4481970	17.44

## LITTLE MOUNTAIN, UINTA COUNTY, UTAH.

Station is on mountain shown on Hayden map as Obelisk Plateau, locally known as Little Mountain, and near highest point.

Station mark: Copper bolt cemented in sandstone rock and marked "S. G.

△  
U. S. S."

Reference point: A post on highest point of mountain, marking the point of U. S. M. R. ("O. M. R."), and supported by a pile of rocks, 9.55 feet distant, true azimuth of which is 30° 26'.

[Latitude 40° 32' 18.40". Longitude 109° 41' 55.65'']

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	<i>Log. meters.</i>	<i>Miles.</i>
Taft.....	35 21 23.30	215 17 33.57	4.1587528	8.96
Marsh.....	150 21 36.00	330 16 33.05	4.3440832	13.72
Trout Creek Peak.....	178 22 03.68	358 21 41.82	4.4410184	.....
Lena.....	220 57 50.04	41 08 57.10	4.5636299	.....
Red.....	243 05 18.88	63 10 57.62	4.1378363	8.54
Vernal Tabernacle.....	304 28 44	124 35 03	4.2216261	10.35
Vernal.....	323 56 19.23	144 02 12.60	4.3389033	13.56

## MARSH PEAK, UINTA COUNTY, UTAH.

On peak of same name on east end of that portion of the Uinta Range which rises above timber line.

Station mark: Aluminum tablet cemented in large flat rock with rocks piled around and over it.

Reference point: Large rock monument, 15.75 feet distant, true azimuth of which is 276° 53'.

[Latitude 40° 42' 40.42". Longitude 109° 49' 40.94".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	<i>Log. meters.</i>	<i>Miles.</i>
Gilbert Peak.....	106 18 00.22	285 57 57.66	4.6528536	.....
Phil Pico.....	164 57 33.64	344 53 55.73	4.4774312	.....
Leidy Peak.....	175 47 49.36	355 47 36.34	3.8050251	.....
Twin Buttes.....	191 16 48.14	11 21 39.70	4.7243835	.....
Trout Creek Peak.....	230 15 37.15	50 20 18.97	4.1194058	.....
Richards Butte.....	232 26 46.63	52 47 20.28	4.7448761	.....
Lena.....	256 18 37.30	76 34 49.24	4.5554878	.....
Red.....	299 10 11.76	119 20 54.22	4.4241722	10.80
Little Mountain.....	330 16 33.05	150 21 36.00	4.3440832	13.72
Taft.....	355 08 52.21	175 10 04.69	4.4922556	19.30

**NIPPLE, UINTA COUNTY, UTAH. (Not occupied.)**

A very sharp cone (can not be occupied) 6 miles east of Ouray, 1 mile south of White River. Well known as "Mollie's Nipple."

[Latitude 40° 03' 25.17". Longitude 109° 34' 11.99".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	<i>Log. meters.</i>	<i>Miles.</i>
Cone.....	102 20 36.02	282 10 17.18	4.3674429	14.48
Ouray.....	115 52 16.77	295 44 44.85	4.2668832	11.47
White.....	147 33 10.85	327 31 50.12	3.7431804	3.44
Halfway.....	158 30 21.18	338 24 45.72	4.5248155	20.80
Vernal.....	183 03 02.30	3 03 54.53	4.5545964	22.28

**OURAY, UINTA COUNTY, UTAH.**

On east edge of a flat mesa 4 miles northwest of Ouray, 1 mile west of Duchesne River.

Station mark: Tablet in boulder over which is a cairn for signal.

[Latitude 40° 07' 45.81". Longitude 109° 45' 53.70".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	<i>Log. meters.</i>	<i>Miles.</i>
Cone.....	63 19 00.83	243 16 13.64	3.8374573	4.28
Roosevelt.....	139 26 20.81	319 19 58.52	4.3327866	13.37
Randlett.....	169 22 04.93	349 21 03.22	4.0882917	7.62
Halfway.....	190 31 47.27	10 33 44.79	4.3711066	14.60
Vernal.....	213 35 41.30	33 44 06.98	4.5232847	20.73
B. M.....	248 39 29.30	68 45 37.23	4.1611829	9.00
White.....	283 48 34.30	103 54 45.63	4.1479058	8.74
Nipple.....	295 44 44.86	115 52 16.77	4.2663332	11.47

**RANDLETT, UINTA COUNTY, UTAH.**

On a very sharp rocky butte one-half mile east of Randlett.

Station mark: Tablet in large boulder.

Signal and reference mark: Small cairn on top of large boulder which is highest point of butte, distance from station 15.80 feet, true azimuth 13° 48'.

[Latitude 40° 14' 16.28". Longitude 109° 47' 29.34".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	<i>Log. meters.</i>	<i>Miles.</i>
Cone.....	14 22 47.29	194 21 01.61	4.1937695	9.70
Roosevelt.....	110 07 35.28	290 02 14.38	4.0967381	7.77
Taft.....	178 44 29.56	358 44 16.52	4.3349208	13.44
Halfway.....	210 38 06.34	30 41 05.85	4.1092074	7.99
Vernal.....	232 44 59.20	52 44 27.34	4.4154198	16.17
White.....	314 02 41.84	134 09 55.28	4.3452465	13.76
Ouray.....	349 21 03.22	169 22 04.93	4.0882917	7.62

**RED, UINTA COUNTY, UTAH.**

On summit of Red Mountain, 10 miles north of Vernal. Good view in all directions; wagon road from Vernal to within one-fourth mile of station.

Signal and reference mark: A quadripod with targets, distance 2.5 feet, true azimuth  $197^{\circ} 41'$ .

Station mark: Tablet in solid rock.

[Latitude  $40^{\circ} 35' 39.62''$ . Longitude  $109^{\circ} 33' 14.78''$ .]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	Log. meters.	Miles.
Little Mountain.....	63 10 57.62	243 05 18.88	4.1378363	8.54
Marsh.....	119 20 54.22	299 10 11.76	4.4241722	10.80
Tabernacle.....	354 40 28	174 41 09	4.1963837	9.77
Vernal.....	358 39 29.50	178 39 44.88	4.3777653	14.83

**ROOSEVELT, UINTA COUNTY, UTAH.**

On a sharp butte 3 miles east of Roosevelt, 1 mile south of road from Roosevelt to Fort Duchesne.

Station mark: Tablet in solid rock.

Signal: A cairn over station mark.

[Latitude  $40^{\circ} 16' 35.38''$ . Longitude  $109^{\circ} 55' 45.93''$ .]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	Log. meters.	Miles.
Taft.....	212 56 05.29	33 01 13.79	4.3150383	12.84
Halfway.....	249 36 27.71	69 44 48.52	4.2899423	12.11
Randlett.....	290 02 14.38	110 07 35.28	4.0967381	7.77
Ouray.....	319 19 58.52	139 26 20.81	4.3327866	13.37

**TAFT, UINTA COUNTY, UTAH.**

On a long bare ridge running northeast one-half mile west of Deep Creek, 2 miles north of Taft post office.

Station mark: Tablet in boulder.

Signal: Quadripod with targets, distance from station 3.8 feet, true azimuth  $83^{\circ} 35'$ .

[Latitude  $40^{\circ} 25' 57.16''$ . Longitude  $109^{\circ} 47' 49.40''$ .]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	Log. meters.	Miles.
Roosevelt.....	33 01 13.79	212 56 05.29	4.3150383	12.84
Marsh.....	175 10 04.09	355 08 52.21	4.4922556	19.30
Little Mountain.....	215 17 33.57	35 21 23.30	4.1587528	8.96
Vernal.....	285 27 48.81	105 37 31.15	4.3421958	13.66
Halfway.....	326 20 16.21	146 23 29.13	4.1030978	7.88
Randlett.....	358 44 16.52	178 44 29.56	4.3349208	13.44

**VERNAL, UINTA COUNTY, UTAH.**

On a range of bare hills 5 miles south of Vernal. Vernal and Fort Duchesne wagon road crosses ridge 1 mile west of station.

Station mark: Tablet in boulder.

Signal and reference mark: Large rock cairn, distance from station 5 feet, true azimuth  $304^{\circ} 02'$ .

[Latitude 40° 22' 46.12". Longitude 109° 32' 51.09".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	Log. meters.	Miles.
Nipple.....	3 03 54.53	183 03 02.30	4.5545964	22.28
White.....	8 55 08.98	188 52 55.72	4.4985352	19.58
Ouray.....	33 44 06.98	213 35 41.30	4.5232847	20.73
Cone.....	38 41 22.87	218 30 09.70	4.5964331	24.53
Randlett.....	52 54 27.34	232 44 59.20	4.4154198	16.17
Halfway.....	71 50 21.23	251 43 52.27	4.1737941	9.27
Deep Creek.....	100 04 00	279 54 38	4.3171666	12.90
Taft.....	105 37 31.15	285 27 48.81	4.3421958	13.66
Little Mountain.....	144 02 12.60	323 56 19.23	4.3389033	13.56
Red.....	178 39 44.88	358 39 29.50	4.3777653	14.83

**VERNAL TABERNACLE, UINTA COUNTY, UTAH. (Not occupied.)**

Station mark: Center of spire of Mormon Tabernacle at Vernal.

[Latitude 40° 27' 12.27". Longitude 109° 32' 12.89".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	Log. meters.	Miles.
Vernal.....	6 15 52	186 15 26	3.9168974	5.13
Little Mountain.....	124 35 03	304 28 44	4.2216261	10.35
Red.....	174 41 09	334 40 29	4.1963837	9.77

**WHITE, UINTA COUNTY, UTAH.**

On the east end of a high ridge 5 miles east of Ouray, 1 mile north of White River; wagon road from Watson to Ouray passes one-half mile south of station.

Station mark: Tablet in bowlder over which is a cairn for signal.

[Latitude 40° 05' 56.62". Longitude 109° 36' 17.38".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	Log. meters.	Miles.
Cone.....	90 52 31.61	270 43 33.27	4.2966286	12.30
Ouray.....	103 54 45.63	283 48 34.30	4.1479058	8.74
Randlett.....	134 09 55.28	314 02 41.84	4.3452465	13.76
Halfway.....	160 37 51.86	340 33 37.23	4.4481970	17.44
B. M.....	179 05 58.63	359 05 54.93	3.9360875	5.36
Vernal.....	188 52 55.72	8 55 08.98	4.4985352	19.58
Nipple.....	327 31 50.12	147 33 10.85	3.7431804	3.44

Camels Back, Dunstein, Fort Douglas, McDowell Mountain, Mammoth, Mercur, Provo, and Saltair 30' quadrangles.

**JUAB, MILLARD, SALT LAKE, TOOELE, AND UTAH COUNTIES.**

The following positions on North American datum were determined by primary triangulation by Charles F. Urquhart in July, August, and September, 1915. The values are based upon United States Coast and Geodetic Survey stations Mount Nebo and Deseret.

Three stations of the United States Coast and Geodetic Survey were occupied and six were tied to by intersections. Ten new primary points were established and 35 secondary points were located by intersections. Bingham Geological Survey station, located by the three-point method by R. U. Goode in 1899, and Mammoth Peak (Eureka), located by same method by S. S. Gannett in 1896, were relocated.

**ALPINE, UTAH COUNTY, UTAH. (Not occupied.)**

Station is the highest point of mountain peak about 5 or 6 miles north of Alpino. It is about 4 miles southeast of Lone Peak Needle and not so high, but very prominent.

[Latitude 40° 29' 24.931". Longitude 111° 41' 44.424".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	Log. meters.	Miles.
Lake.....	42 31 34.03	222 21 53.40	4.4958027	19.460
Cedar Point.....	70 56 23.93	250 45 16.60	4.4091974	15.942
Herriman.....	80 38 33.31	260 18 59.57	4.6356309	26.852

**ANT HILL, UTAH COUNTY, UTAH.**

On a sagebrush hill about 10 miles southeast of Fairfield and about 15 miles north-northwest from Goshen. The Fairfield-Goshen road passes within a mile of point where it crosses the divide between Cedar Valley and Goshen Valley. Can be easily reached on horseback from any direction.

Signal: A rock cairn 6 feet at base and 7 feet high.

Station mark: A United States Geological Survey bronze triangulation tablet set under center of signal in solid rock.

[Latitude 40° 07' 55.364". Longitude 111° 59' 46.707".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	Log. meters.	Miles.
Boulter.....	50 12 21.25	230 04 37.76	4.3469113	13.812
Lava.....	126 21 38.61	306 15 36.56	4.2168994	10.239
Lone Cedar.....	136 15 03.36	316 06 42.75	4.4228777	16.452
Fairfield.....	148 42 14.03	328 38 12.19	4.2315855	10.591
Herriman.....	152 19 05.13	332 11 15.41	4.5666387	22.908
Tank.....	162 14 35.10	342 11 36.37	4.3309479	13.314
Cedar Point.....	182 18 50.49	2 19 25.23	4.4967032	19.501
Lake.....	194 46 57.55	14 48 57.73	4.2364524	10.710
Provo No. 2.....	240 38 55.53	60 54 45.31	4.6004240	24.761
Y.....	247 52 47.81	68 07 20.64	4.5379087	21.442
Springville.....	251 24 46.18	71 41 48.24	4.5965579	24.542
Spanish Fork.....	276 47 10.91	97 05 19.09	4.6052714	25.039
Santaquin.....	297 15 05.76	117 29 30.25	4.5545058	22.277
Nebo.....	331 01 08.29	151 10 01.35	4.6099874	25.313

**BENNION, TOOELE COUNTY, UTAH.**

On the summit of a high rocky peak at the source of Pine Canyon. There are two peaks to the north of it with about the same elevation. There is no local name for this mountain. It is about 10 miles in an air line south-southwest of Vernon and about 4 miles southwest of Israel Bennion's ranch. Can be reached on horseback by going up Pine Canyon. There is a spring in Pine Canyon about a mile below signal, but there is very little feed on the mountain. A party may camp at Mr. Bennion's ranch.

Signal and station mark: A spruce tree supported in a cleft in the solid rock by a small rock cairn.

Reference mark: A United States Geological Survey triangulation tablet set in top of high rock on north end of peak.



[Latitude 39° 59' 05.263". Longitude 112° 32' 23.275'.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	<i>Log. meters.</i>	<i>Miles.</i>
Skull.....	98 03 15.00	277 56 12.32	4.1974047	9.789
Granite.....	104 34 53.76	284 06 41.11	4.8085240	39.983
Castle.....	113 49 45.82	293 33 40.81	4.5890038	24.119
Round Top.....	136 12 59.87	316 05 41.51	4.3674218	14.480
Scrub.....	149 28 05.15	329 11 29.72	4.8534148	44.337
Deseret.....	172 08 03.84	352 04 44.12	4.7263053	33.087
Stookey.....	179 28 53.87	359 28 46.63	4.4672738	18.223
South.....	187 45 46.03	7 49 05.54	4.7314782	33.483
Faust.....	209 07 25.38	29 13 14.85	4.4211952	16.389
Herriman.....	210 35 52.00	30 49 06.02	4.7556079	35.396
Vernon.....	216 34 46.80	36 38 53.50	4.1830661	9.471
Center.....	220 30 21.32	40 36 29.57	4.3192931	12.961
Lava.....	231 34 08.69	51 49 07.53	4.6244640	26.171
Topliff.....	235 34 55.84	55 47 34.06	4.5288057	20.997
Lake.....	236 45 08.32	57 08 09.47	4.7819410	37.609
Boulter.....	265 47 16.46	86 00 31.19	4.4684884	18.274
Sable.....	276 34 50.71	96 42 30.41	4.2328388	10.622
Eureka.....	278 47 13.85	99 04 03.61	4.5772146	23.473
Nobo.....	286 00 56.61	106 30 43.85	4.8385542	42.845
Sunrise.....	294 24 14.98	114 42 18.99	4.6447713	27.423
Salt Creek.....	297 13 01.04	117 43 39.02	4.8860569	47.798
Dutch.....	302 30 43.67	122 33 02.13	3.7829655	3.770
Maple.....	305 04 19.12	125 12 44.74	4.3594315	14.216
Sevier.....	326 03 11.75	146 15 29.10	4.6919962	30.574
Scipio.....	336 23 18.09	156 36 04.12	4.8553038	44.530

**BINGHAM, SALT LAKE COUNTY, UTAH. (Not occupied.)**

Same as the three-point station located by R. U. Goode and described in Twenty-first Annual Report of the United States Geological Survey, part 1, page 348, as follows:

"On the point on summit of Oquirrh Mountains, south of and about one-fourth mile from wagon road which crosses main divide from Bingham Canyon by way of United States mine to Middle Fork. The station is on the eastern one of two summits.

"Station mark: Rock cairn."

[Latitude 40° 30' 01.439". Longitude 112° 10' 31.037'.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	<i>Log. meters.</i>	<i>Miles.</i>
Herriman.....	13 11 03.21	193 10 09.85	3.9292942	5.280
Cedar Point.....	300 03 38.36	120 11 11.33	4.2791274	11.816
Lake.....	320 58 51.44	141 07 49.60	4.4936302	19.363

**BOULTER, TOOELE COUNTY, UTAH.**

Station is on the most western of two high bald peaks about 6 miles east of Lofgreen, a station on the San Pedro, Los Angeles & Salt Lake Railroad, and about 6 miles northwest of Eureka. The mountains are locally known as the Boulter Mountains. Can be reached on horseback from any direction, but the mountain is rather rocky. A party may camp at Lofgreen or Eureka.

Signal: A rock cairn 6 feet high and 6 feet in diameter at the base, supporting a spruce tree in the center.

Station mark: A United States Geological Survey triangulation tablet set in solid rock under center of tree.

[Latitude 40° 00' 13.467". Longitude 112° 11' 46.750'']

To station—	Azimuth.	Back azimuth.	Distance.	
			<i>Log. meters.</i>	<i>Miles.</i>
Scipio.....	0 44 55.02	180 44 31.37	4.8314061	42.146
Sevier.....	2 41 24.25	182 40 30.06	4.6336404	26.729
Maple.....	34 56 17.03	214 51 29.00	4.2700132	11.571
Sable.....	71 46 26.98	251 40 52.19	4.1145377	8.089
Bennion.....	86 00 31.19	265 47 16.46	4.4684884	18.274
Lookout.....	99 38 26.33	279 23 44.56	4.5180057	20.481
Vernon.....	116 41 20.07	296 32 11.18	4.3544334	14.053
Stookey.....	132 46 13.34	312 32 49.19	4.6039360	24.962
Deseret.....	144 19 22.09	324 02 43.67	4.7955244	38.804
South.....	156 55 59.75	336 46 00.60	4.7464506	34.658
Topliff.....	175 18 50.08	355 18 12.30	4.2304960	10.564
Herriman.....	179 48 45.21	359 48 41.01	4.6709339	29.126
Lava.....	188 53 32.48	8 55 14.82	4.3855460	15.097
Cedar Point.....	201 47 39.20	21 55 58.74	4.6914210	30.533
Lake.....	214 40 43.39	34 50 27.62	4.5754788	23.379
Ant Hill.....	230 04 37.76	50 12 21.25	4.3469113	13.812
Y.....	240 50 28.79	61 12 44.52	4.7489157	34.855
Springville.....	243 40 43.36	64 05 28.10	4.7835758	37.751
Spanish Fork.....	260 27 30.52	80 53 20.55	4.7624765	35.961
Santaquin.....	272 25 56.56	92 48 02.67	4.6901980	30.447
Nebo.....	300 02 57.32	120 19 31.61	4.6292985	26.464
Salt Creek.....	313 55 11.67	134 12 37.92	4.7327911	33.585
Eureka.....	314 57 49.00	135 01 24.66	4.0317938	7.001
Sunrise.....	332 11 04.66	152 15 55.52	4.3637293	14.358

**CASTLE, TOOELE COUNTY, UTAH. (Not occupied.)**

Highest point of low but very prominent mountain in Skull Valley. All the country near by is desert.

[Latitude 40° 07' 31.022". Longitude 112° 57' 22.851'']

To station—	Azimuth.	Back azimuth.	Distance.	
			<i>Log. meters.</i>	<i>Miles.</i>
Deseret.....	217 00 53.36	37 13 43.11	4.6682447	28.946
Stookey.....	248 34 00.60	68 50 01.00	4.5773784	23.482
Bennion.....	293 33 40.81	113 49 45.82	4.5890038	24.119

**CEDAR POINT, UTAH COUNTY, UTAH.**

On the point of a low, bare ridge about 6 miles west-northwest of Lehi, and about 9 miles northeast of Cedar Valley. The road from Lehi to Cedar Valley passes within 2 miles of the point where it joins the road from Riverton to Lehi. Can be easily reached on horseback from any direction.

Signal: A rock cairn 5 feet at base and 5 feet high.

Station mark: A United States Geological Survey bronze triangulation tablet set in solid rock under center of monument.

[Latitude 40° 24' 52.030". Longitude 111° 58' 52.962".]

To station—	Azimuth.	Back azimuth.	Distance.	
			<i>Log. meters.</i>	<i>Miles.</i>
Ant Hill.....	2 19 25.23	182 18 50.49	4.4967032	19.501
Boulter.....	21 55 58.74	201 47 39.20	4.6914210	30.533
Fairfield.....	31 05 10.27	211 00 32.94	4.2924258	12.184
Lava.....	33 57 49.89	213 51 12.01	4.4154210	16.172
Tank.....	35 28 22.52	215 24 48.47	4.1286278	8.356
Herriman.....	94 01 09.04	273 52 43.11	4.2657439	11.458
Fowler.....	109 17 30.99	289 10 10.71	4.2289825	10.528
Bingham.....	120 11 11.33	300 03 38.36	4.2791274	11.816
Capitol.....	191 06 24.52	11 10 04.25	4.6135882	25.541
Murray.....	195 49 48.35	15 53 19.94	4.4477362	17.422
Lone Peak.....	236 45 32.95	56 54 20.76	4.3595518	14.220
Alpine.....	250 45 16.60	70 56 23.93	4.4091974	15.942
Timpanogas Flag.....	275 05 25.44	95 18 29.51	4.4570313	17.798
Lehi Temple.....	283 07 34.51	103 12 44.66	4.4640373	7.201
Lehi.....	287 29 12.53	107 34 58.48	4.1206544	8.204
Provo.....	288 39 42.92	108 54 59.17	4.5472876	21.910
Provo No. 2.....	289 28 10.66	109 43 28.40	4.5501625	22.055
Y.....	300 53 47.82	121 07 48.42	4.5535612	22.229
Spanish Fork.....	312 59 56.82	133 17 33.46	4.7240430	32.915
Lake.....	347 58 47.88	168 00 13.61	4.1767220	9.334

## CENTER, TOOELE COUNTY, UTAH.

On a bald hill about 4 miles northeast of Vernon and about 5 miles south of Faust, a station on the San Pedro, Los Angeles & Salt Lake Railroad. Can be easily reached on horseback from any direction. A party may camp at Vernon or at a ranch near Faust.

Signal: A rock cairn 6 feet in diameter at the base and 7 feet high.

Station mark: A United States Geological Survey bronze triangulation tablet under center of cairn.

[Latitude 40° 07' 39.089". Longitude 112° 22' 51.054".]

To station—	Azimuth.	Back azimuth.	Distance.	
			<i>Log. meters.</i>	<i>Miles.</i>
Dutch.....	23 54 00.56	203 50 11.09	4.3200949	12.985
Bennion.....	40 36 29.57	220 30 21.32	4.3192931	12.961
Vernon.....	51 04 15.26	231 02 13.66	3.7594769	3.571
Lookout.....	63 42 31.97	243 34 56.88	4.2714403	11.609
Stookey.....	134 22 21.91	314 16 05.41	4.2853657	11.987
Deseret.....	150 38 35.53	330 29 05.45	4.6270070	26.324
South.....	170 37 07.55	350 34 17.27	4.5803847	23.645
Faust.....	174 26 30.21	354 26 11.15	3.8582885	4.484
East Poplar.....	189 56 21.19	9 58 01.49	4.3273009	13.202
Herriman.....	205 04 17.15	25 11 22.40	4.5634045	22.738
Lone Cedar.....	216 14 38.31	36 21 11.55	4.3860946	15.116
Lava.....	242 08 51.27	62 17 42.29	4.3426843	13.673
Lake.....	245 03 13.70	65 20 07.50	4.6119155	25.425
Topliiff.....	257 21 37.19	77 28 07.62	4.1669933	9.127
Sable.....	349 11 53.00	169 13 25.20	4.2587933	11.276

## CLOVER, TOOELE COUNTY, UTAH. (No check; not occupied.)

Station is center of cupola on church at Clover, a post office in Rush Valley.

[Latitude 40° 20' 22.130". Longitude 112° 27' 38.378".]

To station—	Azimuth.	Back azimuth.	Distance.	
			<i>Log. meters.</i>	<i>Miles.</i>
Stookey.....	34 50 39.83	214 47 28.32	4.0881213	7.612
South.....	182 18 58.10	2 19 13.69	4.1466747	8.710

## DESERET, TOOELE COUNTY, UTAH.

United States Coast and Geodetic Survey station, described as follows in United States Coast and Geodetic Survey Special Publication 19:

"On the summit of the highest peak of the Onaqui Mountains, about 8 miles a little west of south from Grantsville and about 12 miles east of Stockton. The station is marked by a copper bolt set in solid rock between the bases of three small piers used for mounting the instrument. The station is nearly surrounded by a ring wall of rocks 4 feet high, with an inner diameter of 11 feet. Three reference marks are just outside the wall at the following distances and azimuths from the station: 3.10 meters,  $322^{\circ} 53'$ ; 2.18 meters,  $88^{\circ} 08'$ ; and 2.62 meters,  $198^{\circ} 38'$ . Deseret latitude station, marked by a stone and brick pier, is 10.85 meters from station in azimuth  $27^{\circ} 42'.$ " (Page 131.)

The circular wall described above had caved in on the east side, so a rock monument 10 feet at base and 9 feet high, was built around the pier used by the Coast Survey.

The best camping place on the east side of the mountain is at Mr. Wrathall's ranch, on Box Elder Creek. Go from this ranch over low divide to South Willow Creek; thence up South Willow Creek to foot of peak; thence on foot to summit.

The Coast Survey describes the station as being 10 miles east of Stockton, when it should be west.

[Latitude  $40^{\circ} 27' 35.301''$ . Longitude  $112^{\circ} 37' 32.551''$ .]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	<i>Log. meters.</i>	<i>Miles.</i>
Skull.....	9 17 03.49	189 13 18.48	4.7094298	31.826
Round Top.....	13 45 56.04	193 41 55.55	4.5681320	22.987
Castle.....	37 13 43.11	217 00 53.36	4.6682447	28.946
Tree.....	53 29 16.46	233 25 20.36	4.0286209	6.637
Granite.....	56 20 07.20	235 55 06.23	4.8197025	41.025
Scrub.....	106 41 18.99	286 27 59.56	4.4806348	18.793
Onaqui.....	183 23 19.92	3 23 45.93	4.2019090	9.891
Smelter.....	253 27 41.43	73 43 20.32	4.5499679	22.045
Tooele.....	253 44 57.28	73 58 11.63	4.4769088	18.632
South.....	267/24 28.66	87 31 09.86	4.1637472	9.059
Herriman.....	275 47 18.30	96 03 56.83	4.5619576	22.662
Lone Cedar.....	296 03 04.12	116 19 09.82	4.5930705	24.346
East Poplar.....	303 03 01.94	123 14 13.77	4.4654817	18.148
Lava.....	303 21 07.76	123 39 31.22	4.6835226	29.983
Nebo.....	314 14 12.20	134 47 27.68	5.0118874	63.861
Boulter.....	324 02 43.67	144 19 22.09	4.7955244	38.804
Sabie.....	336 01 18.44	156 12 20.10	4.7770456	37.187
Scipio.....	343 02 15.28	163 18 23.66	5.0925837	76.901
Stookey.....	343 15 20.46	163 18 33.45	4.3882959	15.193
Bennion.....	352 04 44.12	172 08 03.84	4.7263053	33.087

## DUTCH, TOOELE COUNTY, UTAH. (Not occupied.)

Highest point of prominent mountain locally known as "Dutch Peak," about 10 miles a little west of south from Vernon.

[Latitude  $39^{\circ} 57' 19.482''$ . Longitude  $112^{\circ} 28' 47.740''$ .]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	<i>Log. meters.</i>	<i>Miles.</i>
Bennion.....	122 33 02.13	302 30 43.67	3.7829655	3.770
Center.....	203 50 11.09	23 54 00.56	4.3200949	12.985
Sabie.....	263 46 37.92	83 51 59.04	4.0768704	7.417

**EAST POPLAR, TOOELE COUNTY, UTAH. (Not occupied.)**

The eastern one of two very prominent trees on Bates Creek, about a mile below the Bates ranch. The road from Fairfield to Stockton passes on the east side of point and by the Bates ranch. This is the only ranch between Fairfield and Stockton.

[Latitude 40° 18' 57.589". Longitude 112° 20' 15.734".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	<i>Log. meters.</i>	<i>Miles.</i>
Center.....	9 58 01.49	189 56 21.19	4.3273009	13.202
Stookey.....	66 57 08.21	246 49 10.55	4.2781866	11.791
Deseret.....	123 14 13.77	303 03 01.94	4.4654817	18.148
South.....	149 18 59.65	329 14 28.39	4.2861388	12.009
Lava.....	304 00 04.61	124 07 16.27	4.2798307	11.835

**EUREKA (MAMMOTH PEAK), TOOELE COUNTY, UTAH. (Not occupied.)**

The highest point of a prominent peak south of the town of Eureka, one-half mile east of Mammoth mine—the same point located by the United States Geological Survey for control of the Tintic quadrangle, in 1896, called Mammoth Peak.

Station mark: A cairn on highest part of summit.

[Latitude 39° 55' 55.191". Longitude 112° 06' 11.021".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	<i>Log. meters.</i>	<i>Miles.</i>
Bennion.....	99 04 03.61	278 47 13.85	4.5772146	23.473
Sable.....	100 53 20.79	280 44 10.67	4.3160795	12.866
Boulter.....	135 01 24.66	314 57 49.00	4.0517938	7.001

**FAIRFIELD, UTAH COUNTY, UTAH. (Not occupied.)**

Smokestack on an old mill on west side of village of Fairfield, about 10 miles south-east of Lehi.

[Latitude 40° 15' 47.401". Longitude 112° 06' 01.402".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	<i>Log. meters.</i>	<i>Miles.</i>
Lava.....	42 34 20.08	222 32 19.60	3.8141564	4.050
Cedar Point.....	211 00 32.94	31 05 10.27	4.2924258	12.184
Lake.....	260 55 16.29	81 01 18.85	4.1276734	8.337
Ant Hill.....	328 38 12.19	148 42 14.03	4.2315855	10.591

**FAUST, TOOELE COUNTY, UTAH. (Not occupied.)**

Center of water tank at Faust station on the San Pedro, Los Angeles & Salt Lake Railroad. There is no town at this station.

[Latitude 40° 11' 31.941". Longitude 112° 23' 20.601".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	<i>Log. meters.</i>	<i>Miles.</i>
Bennlon.....	29 13 14.85	209 07 25.38	4.4211952	16.389
Stookey.....	115 43 34.98	295 37 37.31	4.1623178	9.030
South.....	169 43 12.31	349 40 41.04	4.4893477	19.173
Herriman.....	211 57 54.31	32 05 18.96	4.4858073	19.018
Lava.....	261 14 47.38	81 23 57.83	4.3096160	12.675
Center.....	354 26 11.15	174 26 30.21	3.8582885	4.484

**FOWLER, SALT LAKE COUNTY, UTAH. (Not occupied.)**

Rock cairn built by Mr. Fowler on the east side of the range and about 3 miles north-northeast of Herriman triangulation station.

[Latitude 40° 27' 52.951". Longitude 112° 10' 11.723".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	Log. meters.	Miles.
Herriman.....	29 02 33.75	209 01 27.89	3.6928631	3.063
Cedar Point.....	289 10 10.71	109 17 30.99	4.2289825	10.528
Lake.....	316 34 43.57	136 43 29.03	4.4452791	17.323

**GRANITE, TOOELE COUNTY, UTAH. (Not occupied.)**

On highest point of Granite Mountain, a well-known peak. It was located by the United States Coast and Geodetic Survey.

[Latitude 40° 07' 42.220". Longitude 113° 16' 13.478".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	Log. meters.	Miles.
Deseret.....	235 55 06.23	56 20 07.20	4.8197025	41.025
Stookey.....	257 34 37.03	78 02 47.07	4.8019684	39.384
Bennion.....	284 06 41.11	104 34 53.76	4.8085240	39.983

**HERRIMAN, UTAH AND TOOELE COUNTIES, UTAH.**

Herriman is a point located by the United States Coast and Geodetic Survey on which there was no signal. It is one of the highest points of the Oquirrh Range, but probably lower than the Flat Top Mountain, northwest of Cedar Valley. It is on the line between Utah and Tooele counties and about 2 miles south of Salt Lake County. Both the north and south forks of creek known as West Canyon head at the peak and flow east. The source of Bates Creek is also at this peak; the creek flows west.

The best way to reach the point on horseback is up the south fork of West Canyon. It can also be reached from the west up Bates Creek.

Signal: A rock cairn 6 feet at base and 6 feet high.

Station mark: A United States Geological Survey tablet set in solid rock under center of monument.

[Latitude 40° 25' 33.199". Longitude 112° 11' 53.255".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	Log. meters.	Miles.
Scipio.....	0 21 53.79	180 21 34.21	5.0595560	71.270
Sabie.....	13 28 41.49	193 23 09.43	4.7192358	32.553
Center.....	25 11 22.40	205 04 17.15	4.5634045	22.738
Bennion.....	30 49 06.02	210 35 52.00	4.7556079	35.396
Faust.....	32 05 18.96	211 57 54.31	4.4858073	19.018
Stookey.....	56 15 38.47	236 02 15.02	4.5475088	21.921
Deseret.....	96 03 56.83	275 47 18.30	4.5619576	22.662
South.....	101 34 14.95	281 24 17.42	4.3453741	13.763
Onoqui.....	119 14 57.76	298 58 43.77	4.6063886	25.104
Bingham.....	193 10 09.85	13 11 03.21	3.9292942	5.280
Fowler.....	209 01 27.89	29 02 33.75	3.6928631	3.063
Capitol.....	213 50 13.03	34 02 20.60	4.6728449	29.255
Murray.....	225 15 31.09	45 27 29.90	4.5631845	22.727
Lone Peak.....	253 10 17.15	73 27 31.54	4.5931168	24.348
Alpine.....	260 18 59.57	80 38 33.31	4.6356309	26.852
Cedar Point.....	273 52 43.11	94 01 09.04	4.2657439	11.458
Lehi Temple.....	277 23 28.61	97 37 04.61	4.4762258	18.603
Lehi.....	279 29 34.75	99 43 46.49	4.4973366	19.529
Provo.....	283 30 17.21	103 53 58.97	4.7267679	33.122
Spanish Fork.....	303 04 50.77	123 30 51.78	4.8344067	42.438
Lake.....	306 27 40.63	126 37 31.62	4.4282809	16.658
Tank.....	319 00 02.39	139 04 53.73	4.2092003	10.059
Nebo.....	331 30 20.33	151 47 03.20	4.8898558	48.218
Ant Hill.....	332 11 15.41	152 19 05.13	4.5666387	22.908
Boulter.....	359 48 41.01	179 48 45.21	4.6709339	29.126

## LAVA, TOOELE AND UTAH COUNTIES, UTAH.

On a peak in a low range of mountains dividing the counties of Tooele and Utah, and about 1 mile south of Fivemile Pass on road between Fairfield and Rush Valley. It is about 4 miles in an air line southwest of Fairfield. It can be reached on horseback from any direction.

Signal: A rock cairn 6 feet in diameter at base and 6 feet high.

Station mark: A United States Geological Survey triangulation tablet set in a rock which is buried under center of signal.

[Latitude 40° 13' 11.721". Longitude 112° 09' 07.911".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	Log. meters.	Miles.
Boulter.....	8 55 14.82	188 53 32.48	4.3855460	15.097
Sable.....	29 53 30.01	209 46 12.16	4.5102086	20.117
Topliff.....	36 06 41.07	216 04 20.70	3.9412791	5.428
Bennion.....	51 49 07.53	231 34 08.69	4.6244640	26.171
Center.....	62 17 42.29	242 08 51.27	4.3426843	13.678
Lookout.....	63 00 42.62	242 44 16.48	4.6095115	25.285
Faust.....	81 23 57.83	261 14 47.38	4.3096160	12.675
Stokey.....	95 39 19.87	275 24 11.32	4.5238373	20.758
Deseret.....	123 39 31.22	303 21 07.76	4.6835226	29.983
East Poplar.....	124 07 16.27	304 00 04.61	4.2798307	11.835
South.....	136 52 20.36	316 40 37.04	4.5733417	23.264
Lone Cedar.....	151 35 58.19	331 33 19.82	4.0264669	6.604
Tank.....	212 14 29.00	32 17 32.85	4.1000052	7.823
Cedar Point.....	213 51 12.01	33 57 49.89	4.4154210	16.172
Fairfield.....	222 32 19.60	42 34 20.08	3.8141564	4.050
Lake.....	248 34 29.81	68 42 32.71	4.2779763	11.785
Provo.....	257 45 41.76	78 07 33.64	4.6905637	30.473
Ant Hill.....	306 15 36.56	126 21 38.61	4.2168994	10.239
Nebo.....	323 53 02.51	144 07 56.91	4.7492308	34.880

## LAKE, UTAH COUNTY, UTAH.

On the northernmost high point of the Lake Mountains, a range on the west side of Utah Lake. It is about 10 miles in an air line southwest of Lehi and about 9 miles east of Fairfield. The summit, about a mile south, is a little higher than point on which station is situated. It can be easily reached on horseback.

Signal: A leaning cedar tree with lower branch removed.

Station mark: A United States Geological Survey bronze triangulation tablet set in solid rock under center of top of tree.

[Latitude 40° 16' 55.666". Longitude 111° 56' 40.536".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	Log. meters.	Miles.
Scipio.....	12 52 55.29	192 42 51.02	5.0053861	62.912
Ant Hill.....	14 48 57.73	194 46 57.55	4.2364524	10.710
Boulter.....	34 50 27.62	214 40 43.39	4.5754788	23.379
Sable.....	44 07 45.69	223 52 25.92	4.6870508	30.227
Bennion.....	57 08 09.47	236 45 08.32	4.7819410	37.609
Center.....	65 20 07.50	245 03 13.70	4.6119155	25.425
Lava.....	68 42 32.71	248 34 29.81	4.2779763	11.785
Fairfield.....	81 01 18.85	260 55 16.29	4.1276734	8.337
Stokey.....	86 02 54.60	265 39 42.42	4.7078210	31.708
Lone Cedar.....	96 13 05.28	276 02 43.50	4.3586987	14.192
Herriman.....	126 37 31.62	306 27 40.63	4.4282809	16.658
Powder.....	136 43 29.03	316 34 43.57	4.4452791	17.323
Bingham.....	141 07 49.60	320 58 51.44	4.4936302	19.363
Cedar Point.....	168 00 13.61	347 58 47.88	4.1767220	9.334
Capitol.....	184 59 55.74	5 02 09.12	4.7422145	34.321
Murray.....	186 12 53.75	6 14 59.11	4.6223265	26.042
Lone Peak.....	210 28 27.46	30 35 48.72	4.4996190	19.632
Lehi Temple.....	214 05 51.44	34 09 35.46	4.1631745	9.047
Lehi.....	221 26 56.24	41 31 16.02	4.1554509	8.888
Alpine.....	222 21 53.40	42 31 34.03	4.4958027	19.460
Timpanogas Flag.....	244 27 37.82	64 39 15.12	4.4496181	17.497
Provo No. 2.....	264 38 05.71	84 51 56.56	4.4838908	18.934
Springville.....	277 04 03.19	97 19 06.51	4.5222986	20.685
Spanish Fork.....	301 03 55.30	121 20 05.05	4.6187330	25.828
Santaquin.....	320 19 27.98	140 31 53.82	4.6334999	26.721
Nebo.....	343 41 13.55	163 48 07.66	4.7364366	33.868

**LEHI, UTAH COUNTY, UTAH. (Not occupied.)**

Large chimney at sugar factory about 1 mile southeast of Lehi.

[Latitude 40° 22' 43.070". Longitude 111° 49' 59.155".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	<i>Log. meters.</i>	<i>Miles.</i>
Lake.....	41 31 16.02	221 26 56.24	4.1554509	8.888
Herriman.....	99 43 46.49	279 29 34.75	4.4973366	19.529
Cedar Point.....	107 34 58.48	287 29 12.53	4.1206544	8.204

**LEHI TEMPLE, UTAH COUNTY, UTAH. (Not occupied.)**

Station mark: Center of steeple on Mormon Temple in the town of Lehi.

[Latitude 40° 23' 26.431". Longitude 111° 50' 54.447".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	<i>Log. meters.</i>	<i>Miles.</i>
Lake.....	34 09 35.46	214 05 51.44	4.1631745	9.047
Herriman.....	97 36 04.61	277 23 28.61	4.4762258	18.603
Cedar Point.....	103 12 44.66	283 07 34.51	4.0640373	7.201

**LONE CEDAR, TOOELE COUNTY, UTAH. (Not occupied.)**

A pine tree near the summit of ridge between Cedar Valley and Mercur Canyon. Wagon road passes this point. It was not occupied and the tree resembled a cedar from other stations. Later it was discovered to be a pine tree.

Station mark: Center of tree.

[Latitude 40° 18' 14.764". Longitude 112° 12' 42.011".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	<i>Log. meters.</i>	<i>Miles.</i>
Center.....	36 21 11.55	216 14 38.31	4.3860946	15.116
Stookey.....	77 50 07.78	257 37 16.85	4.4598684	17.915
Deseret.....	116 19 09.82	296 03 04.12	4.5930705	24.346
South.....	131 09 18.27	310 59 53.07	4.4360830	16.960
Lake.....	276 02 43.50	96 13 05.28	4.3586987	14.192
Ant Hill.....	316 06 42.75	136 15 03.36	4.4228777	16.452
Lava.....	331 33 19.82	151 35 38.19	4.0264669	6.604

**LONE PEAK NEEDLE, UTAH AND SALT LAKE COUNTIES, UTAH. (Not occupied.)**

This point is about 11 miles in an air line from Lehi and was located by the United States Coast and Geodetic Survey. It is the highest point in the vicinity and very prominent.

[Latitude 40° 31' 37.936". Longitude 111° 45' 19.779".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	<i>Log. meters.</i>	<i>Miles.</i>
Nebo.....	0 38 10.86	180 37 46.90	4.9006091	49.426
Lake.....	30 35 48.72	210 28 27.46	4.4996190	19.632
Cedar Point.....	56 54 20.76	236 45 32.95	4.3595518	14.220
Herriman.....	73 27 31.54	253 10 17.15	4.5931168	24.348
Spanish Fork.....	338 12 36.10	158 21 27.93	4.7199045	32.603



**LOOKOUT, TOOELE COUNTY, UTAH. (Not occupied.)**

On the highest point of Lookout Peak, about 8 miles a little south of west from Vernon.

[Latitude 40° 03' 10.189". Longitude 112° 34' 37.724".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	<i>Log. meters.</i>	<i>Miles.</i>
Stookey.....	187 38 07.61	7 38 27.07	4.3417620	13.649
Lava.....	242 44 16.48	63 00 42.62	4.6095115	25.285
Center.....	243 34 56.88	63 42 31.97	4.2714403	11.609
Boulter.....	279 23 44.56	99 38 26.33	4.5180057	20.481

**MAPLE, TOOELE COUNTY, UTAH. (Not occupied.)**

Highest point of very prominent mountain locally known as Maple Peak. It is about 10 miles southwest of Eureka, near the Cherry Creek settlement.

[Latitude 39° 51' 58.275". Longitude 112° 19' 15.446".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	<i>Log. meters.</i>	<i>Miles.</i>
Bennion.....	125 12 44.74	305 04 19.12	4.3594315	14.216
Sabie.....	171 16 57.08	351 16 10.69	4.0539323	7.035
Boulter.....	214 51 29.00	34 56 17.03	4.2700132	11.571
Nebo.....	277 11 14.85	97 32 35.16	4.6804632	29.772

**MURRAY, SALT LAKE COUNTY, UTAH. (Not occupied.)**

Large chimney at smelter in town of Murray.

[Latitude 40° 39' 26.395". Longitude 111° 53' 27.400".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	<i>Log. meters.</i>	<i>Miles.</i>
Lake.....	6 14 59.11	186 12 53.75	4.6223265	26.042
Cedar Point.....	15 53 19.94	195 49 48.35	4.4477362	17.422
Herriman.....	45 27 29.90	225 15 31.09	4.5631845	22.727

**NEBO, JUAB COUNTY, UTAH.**

Station is a United States Coast and Geodetic Survey station, described as follows in Special Publication 19:

"On the southernmost summit of Mount Nebo. The station is marked by a copper bolt in a drill hole in the solid rock. Three small brick piers used in mounting the instrument are about the station, and these in turn are nearly surrounded by a ring wall of rocks 10 to 12 feet in diameter. Four reference marks, each consisting of a drill hole in the rock, are just outside the wall at the following distances and azimuths from the stations: 2.56 meters, 38° 01'; 2.66 meters, 121° 28'; 4.25 meters, 204° 16'; and 3.32 meters, 309° 39'.

"Mount Nebo astronomic station, marked by a brick pier, is 23.25 meters (given 25.25 meters in latitude record) from the station in azimuth 321° 35'. The vertical circle station is 4.60 meters distant in azimuth 49° 00'. The latitude pier is partly surrounded by a square rock wall, and the vertical circle station by a circular wall similar to that about the station, but smaller."

The circular wall described above had been destroyed, and a rock cairn 7 feet in diameter at the base and 9 feet high was erected.

There is a road and trail from Mono, a station on the San Pedro, Los Angeles & Salt Lake Railroad, to station, but some of the trail is rather rough. There is a spring about halfway up the mountain, but very little feed. A snow bank was found about 400 feet below the summit on September 1.

[Latitude 39° 48' 39.113''. Longitude 111° 45' 56.918'']

To station—	Azimuth.	Back azimuth.	Distance.	
			<i>Log. meters.</i>	<i>Miles.</i>
Scipio.....	39 20 57.40	219 04 05.85	4.7773613	37.214
Sevier.....	61 10 28.56	240 53 04.21	4.6483730	27.652
Sunrise.....	92 13 47.89	272 02 05.79	4.4166094	16.217
Maple.....	97 32 35.16	277 11 14.85	4.6804632	29.772
Bennion.....	106 30 43.85	286 00 56.61	4.8385542	42.845
Sabie.....	109 35 29.06	289 13 21.03	4.7173868	32.414
Boulter.....	120 19 31.61	300 02 57.42	4.6292985	26.464
Stookey.....	126 29 58.93	305 59 59.53	4.9151530	51.110
Deseret.....	134 47 27.68	314 14 12.20	5.0118874	63.861
Lava.....	144 07 56.91	323 53 02.51	4.7492308	34.880
Ant Hill.....	151 10 01.35	331 01 08.29	4.6099874	25.313
Herriman.....	151 47 03.20	331 30 20.33	4.8898558	48.218
Lake.....	163 48 07.66	343 41 13.55	4.7364366	33.868
Lone Peak.....	180 37 46.90	0 38 10.86	4.9006091	49.426
Santaquin.....	212 24 52.36	32 30 21.73	4.3565866	14.123
Spanish Fork.....	213 26 37.50	33 35 49.25	4.5674605	22.951
Springville.....	200 18 05.73	20 26 10.71	4.7107099	31.920
Salt Creek.....	352 59 15.16	173 00 08.52	4.2121034	10.126

#### ONAGUI, TOOELE COUNTY, UTAH. (Not occupied.)

A prominent peak in the Onagui Range, located by the United States Coast Survey. It is about 10 miles west of Grantsville.

[Latitude 40° 36' 10.481''. Longitude 112° 36' 52.528'']

To station—	Azimuth.	Back azimuth.	Distance.	
			<i>Log. meters.</i>	<i>Miles.</i>
Deseret.....	3 23 45.93	183 23 19.92	4.2019090	9.891
Herriman.....	298 58 43.77	119 14 57.76	4.6063886	25.104
South.....	318 11 46.96	138 18 02.73	4.2103835	12.698

#### PROVO, UTAH COUNTY, UTAH. (Not occupied.)

Small rock cairn on the northern of two peaks on south side of Provo River, 8 or 10 miles southeast of Provo.

[Latitude 40° 18' 43.827''. Longitude 111° 35' 18.193'']

To station—	Azimuth.	Back azimuth.	Distance.	
			<i>Log. meters.</i>	<i>Miles.</i>
Lava.....	78 07 33.64	257 45 41.76	4.6905637	30.473
Herriman.....	103 53 58.97	283 30 17.21	4.7267679	33.122
Cedar Point.....	108 54 59.17	288 39 42.92	4.5472876	21.910

#### PROVO NO. 2, UTAH COUNTY, UTAH. (Not occupied.)

Southern of two peaks on the south side of Provo River, 8 or 10 miles northeast of Provo.

[Latitude 40° 18' 26.057''. Longitude 111° 35' 15.821'']

To station—	Azimuth.	Back azimuth.	Distance.	
			<i>Log. meters.</i>	<i>Miles.</i>
Ant Hill.....	60 54 45.31	240 38 55.53	4.6004240	24.761
Lake.....	84 51 56.56	264 38 05.71	4.4838908	18.934
Cedar Point.....	109 43 28.40	289 28 10.66	4.5501625	22.055

**ROUND TOP, TOOELE COUNTY, UTAH. (Not occupied.)**

On the highest point of a group of hills in Skull Valley, about 15 or 20 miles west of Vernon, a post office in Rush Valley.

[Latitude 40° 08' 10.193". Longitude 112° 43' 44.382".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	Log. meters.	Miles.
Deseret.....	193 41 55.55	13 45 56.04	4.5681320	22.987
Stookey.....	231 37 43.99	51 44 56.30	4.3052294	12.548
Bennion.....	316 05 41.51	136 12 59.87	4.3674218	14.480

**SABIE, TOOELE COUNTY, UTAH.**

A lone peak covered with mahogany brush about 4 miles southwest of Lofgreen, a station on the San Perdo, Los Angeles & Salt Lake Railroad. The trees were cut from the summit. A party can camp at Lofgreen.

Signal and station mark: A mahogany tree 10 feet high supported by a rock cairn 6 feet in diameter at the base and 5 feet high. Azimuth from tree to tablet 289° 32', distance 4.5 feet.

Reference mark: A triangulation tablet set in solid rock.

Instrument was set over center of tablet. The mountain is locally known as Sabie Peak and can be easily reached on horseback from any direction.

[Latitude 39° 58' 01.132". Longitude 112° 20' 27.752".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	Log. meters.	Miles.
Dutch.....	83 51 59.04	263 46 37.92	4.0768704	7.417
Bennion.....	96 42 30.41	276 34 50.71	4.2328388	10.622
Vernon.....	151 02 46.03	330 59 12.46	4.2107957	10.096
Stookey.....	151 15 41.06	331 07 52.86	4.4529603	17.632
Deseret.....	156 12 20.10	336 01 18.44	4.7770456	37.187
Centre.....	169 13 25.20	349 11 53.00	4.2587933	11.276
Herriman.....	193 23 09.43	13 28 41.49	4.7192358	32.553
Topliff.....	207 28 56.73	27 33 54.29	4.3749297	14.733
Lava.....	209 46 12.16	29 53 30.01	4.5102086	20.117
Lake.....	233 52 25.92	44 07 45.69	4.6870508	30.227
Boulter.....	251 40 52.19	71 46 26.98	4.1145377	8.089
Eureka.....	280 44 10.67	100 53 20.79	4.3160795	12.866
Nebo.....	289 13 21.03	109 35 29.06	4.7173868	32.414
Sunrise.....	305 10 04.43	125 20 29.33	4.4525140	17.614
Sevier.....	345 00 46.96	165 05 26.23	4.6047707	25.010
Maple.....	351 16 10.69	171 16 57.08	4.0539323	7.035

**ST. JOHN, TOOELE COUNTY, UTAH. (No check; not occupied.)**

Center of cupola on school building at St. John post office, in Rush Valley.

[Latitude 40° 21' 23.227". Longitude 112° 27' 18.511".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	Log. meters.	Miles.
Stookey.....	32 01 40.61	211 58 16.22	4.1486761	8.750
South.....	180 27 55.25	0 27 58.06	4.0835215	7.531

**ST. JOHN RAILROAD STATION, TOOELE COUNTY, UTAH.** (Not occupied. No check.)

Chimney in center of railroad station at St. John, on the San Pedro, Los Angeles & Salt Lake Railroad.

[Latitude 40° 22' 00.280". Longitude 112° 24' 35.689".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	<i>Log. meters.</i>	<i>Miles.</i>
Stookey.....	40 52 32.86	220 47 23.10	4.2378595	10.745
South.....	161 12 04.58	341 10 21.73	4.0643992	7.207

**SALT CREEK, JUAB COUNTY, UTAH.** (Not occupied by United States Geological Survey.)

Rock cairn located by the United States Coast and Geodetic Survey. It is on a prominent mountain on south side of Salt Creek near the point where creek enters Juab Valley.

[Latitude 39° 39' 54.642". Longitude 111° 44' 33.450".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	<i>Log. meters.</i>	<i>Miles.</i>
Scipio.....	52 59 33.09	232 41 49.97	4.6994370	31.102
Bennion.....	117 43 39.02	297 13 01.04	4.8860569	47.798
Boulter.....	134 12 37.92	313 55 11.67	4.7327911	33.585
Nebo.....	173 00 08.52	352 59 15.16	4.2121034	10.126

**SALT LAKE CITY CAPITOL, SALT LAKE COUNTY, UTAH.** (Not occupied.)

Center of dome on the State Capitol in Salt Lake City.

[Latitude 40° 46' 39.517". Longitude 111° 53' 15.295".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	<i>Log. meters.</i>	<i>Miles.</i>
Lake.....	5 02 09.12	184 59 55.74	4.7422145	34.321
Cedar Point.....	11 10 04.25	191 06 24.52	4.6138882	25.541
Herriman.....	34 02 20.60	213 50 13.03	4.6728449	29.255

**SANTAQUIN, UTAH COUNTY, UTAH.** (Not occupied.)

On highest point of high mountain about 10 miles in an air line east of the town of Santaquin on the Utah Central Railroad.

[Latitude 39° 59' 00.939". Longitude 111° 37' 23.413".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	<i>Log. meters.</i>	<i>Miles.</i>
Nebo.....	32 30 21.73	212 24 52.36	4.3565866	14.123
Boulter.....	92 48 02.67	272 25 56.56	4.6901980	30.447
Ant Hill.....	117 29 30.25	297 15 05.76	4.5545058	22.277
Lake.....	140 31 53.82	320 19 27.98	4.6334999	26.721

**SCIPIO, MILLARD COUNTY, UTAH.** (Not occupied by the United States Geological Survey.)

Described in United States Coast and Geodetic Survey Special Publication 19, page 134, as follows:

"On the highest peak of the Canon Mountains, east of the town of Oak City, and northwest of the town of Scipio. The station is on the highest part of the summit,

about 10 or 12 feet from the edge of the abrupt slope on the eastern and northeastern side of the peak. The station is marked by a copper bolt set in a drill hole in solid rock. It is also marked, about 15 inches above the bolt, by a drill hole in a flat stone embedded in the top of a low masonry pier used for mounting the instrument. The station is nearly surrounded by a ring wall about 5 feet high, with an inner diameter of about 11 feet. Four reference marks, each a drill hole in solid rock, are just outside the wall at the following distances and azimuths from the station: 2.74 meters, 177° 55'; 2.77 meters, 284° 55'; 2.94 meters, 41° 33'; and 2.47 meters, 126° 51'."

[Latitude 39° 23' 34.370". Longitude 112° 12' 23.783".]

To station—	Azimuth.	Back azimuth.	Distance.	
			<i>Log. meters.</i>	<i>Miles.</i>
Bennion.....	156 36 04.12	336 23 18.09	4.8553038	44.530
Deseret.....	163 18 23.66	343 02 15.28	5.0925837	76.901
Herriman.....	180 21 34.21	0 21 53.79	5.0595560	71.270
Boulter.....	180 44 31.37	0 44 55.02	4.8314061	42.146
Lake.....	192 42 51.02	12 52 55.29	5.0053861	62.912
Nebo.....	219 04 05.85	39 20 57.40	4.7773613	37.214
Salt Creek.....	232 41 49.97	52 59 33.09	4.6994370	31.102

**SCRUB, TOOELE COUNTY, UTAH. (Not occupied.)**

Highest point on prominent peak about 20 miles a little north of east of Deseret triangulation station. There is scrub timber on the mountain, probably a summit of Cedar Mountains.

[Latitude 40° 32' 15.053". Longitude 112° 58' 03.525".]

To station—	Azimuth.	Back azimuth.	Distance.	
			<i>Log. meters.</i>	<i>Miles.</i>
Deseret.....	286 27 59.56	106 41 18.99	4.4806348	18.793
Stookey.....	311 29 19.21	131 45 50.06	4.6834330	29.977
Bennion.....	329 11 29.72	149 28 05.15	4.8534148	44.337

**SEVIER, JUAB COUNTY, UTAH. (Not occupied.)**

Tree or cairn on the highest of three rather prominent peaks. It is on the north side of the San Pedro, Los Angeles & Salt Lake Railroad, and about 16 miles in an air line north of Scipio triangulation station.

[Latitude 39° 37' 00.211". Longitude 112° 13' 11.388".]

To station—	Azimuth.	Back azimuth.	Distance.	
			<i>Log. meters.</i>	<i>Miles.</i>
Bennion.....	146 15 29.10	326 03 11.75	4.6919962	30.574
Sable.....	165 05 28.23	345 00 46.96	4.6047707	25.010
Boulter.....	182 40 30.06	2 41 24.25	4.6336404	26.729
Nebo.....	240 53 04.21	61 10 28.56	4.6483730	27.652

**SKULL, TOOELE COUNTY, UTAH. (Not occupied.)**

Highest point of rather sharp peak in group of hills about 10 miles west of Bennion triangulation station; a flat-topped mountain north of peak is a little higher.

[Latitude 40° 00' 16.314". Longitude 112° 43' 20.922".]

To station—	Azimuth.	Back azimuth.	Distance.	
			<i>Log. meters.</i>	<i>Miles.</i>
Deseret.....	189 13 18.48	9 17 03.49	4.7094298	31.826
Stookey.....	209 22 02.76	29 28 59.36	4.4935103	19.358
Bennion.....	277 56 12.32	98 03 15.00	4.1974047	9.789

**SMELTER, TOOELE COUNTY, UTAH. (No check; not occupied.)**

Large chimney on smelter at foot of mountains east-northeast of town of Tooele.

[Latitude 40° 33' 00.213". Longitude 112° 13' 27.101".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	Log. meters.	Miles.
South.....	64 22 00.86	244 13 03.53	4.3347827	13.432
Deseret.....	73 43 20.32	253 27 41.48	4.5499679	22.045

**SOUTH, TOOELE COUNTY, UTAH.**

On the westernmost summit of a low range of mountains connecting the Oquirrh Mountains and the Onaqui Range, about 6 miles west of Stockton, 6 miles south of Grantsville, and 10 miles north of St. John. The road from St. John to Grantsville passes about a mile and a half west of station at point where it crosses the divide. Can be easily reached on horseback from any direction.

Signal: A rock cairn 6 feet at base and 7 feet high.

Station mark: A United States Geological Survey tablet set in solid rock under center of cairn.

[Latitude 40° 27' 56.218". Longitude 112° 27' 14.333".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	Log. meters.	Miles.
St. John.....	0 27 58.06	180 27 55.35	4.0835315	7.531
Clover.....	2 19 13.69	182 18 58.10	4.1466747	8.710
Bennion.....	7 49 05.54	187 45 46.03	4.7314782	33.483
Stookey.....	17 27 34.74	197 24 07.41	4.4017603	15.671
Deseret.....	87 31 09.86	267 24 28.66	4.1637472	9.059
Onaqui.....	138 18 02.73	318 11 46.96	4.3103835	12.698
Tooele.....	241 34 54.28	61 41 27.17	4.2092018	10.059
Smelter.....	244 13 03.53	64 22 00.86	4.3347827	13.432
Herriman.....	281 24 17.42	101 34 14.95	4.3453741	13.763
Lone Cedar.....	310 59 53.07	131 09 18.27	4.4360830	16.960
Lava.....	316 40 37.04	136 52 20.36	4.5733417	23.264
East Poplar.....	329 14 28.39	149 18 59.65	4.2861388	12.009
Boulter.....	336 46 00.60	156 55 59.75	4.7464506	34.658
St. John R. R. station.....	341 10 21.73	161 12 04.58	4.0643992	7.207
Faust.....	349 50 41.04	169 43 12.31	4.4893477	19.173
Center.....	350 34 17.27	170 37 07.55	4.5803847	23.645

**SPANISH FORK PEAK, UTAH COUNTY, UTAH. (Not occupied.)**

This point was located by the United States Coast and Geodetic Survey and is marked by a rock cairn. It was also occupied by a United States Geodetic Survey party in 1897. It is on the highest point of mountains between Hobbie Creek and North Creek and about 6 miles in an air line southeast of Springville.

[Latitude 40° 05' 17.553". Longitude 111° 31' 37.652".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	Log. meters.	Miles.
Nebo.....	33 35 49.25	213 26 37.50	4.5674605	22.951
Boulter.....	80 53 20.55	260 27 30.52	4.7624765	35.961
Ant Hill.....	97 05 19.09	276 47 10.91	4.6052714	25.039
Lake.....	121 20 05.05	301 03 55.30	4.6187330	25.828
Herriman.....	123 30 51.78	303 04 50.77	4.8344067	42.438
Cedar Point.....	133 17 33.46	312 59 56.82	4.7240430	32.915
Lone Peak.....	158 21 27.93	338 12 36.10	4.7199045	32.603

**SPRINGVILLE PEAK, UTAH COUNTY, UTAH. (Not occupied.)**

On highest point of peak, about 5 miles east of Provo.

[Latitude 40° 14' 40.528". Longitude 111° 33' 22.854".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	Log. meters.	Miles.
Nebo.....	20 26 10.71	200 18 05.73	4.7107099	31.920
Boulter.....	64 05 28.10	243 40 43.36	4.7835758	37.751
Ant Hill.....	71 41 48.24	251 24 46.18	4.5965579	24.542
Lake.....	97 19 06.51	277 04 03.19	4.5222986	20.685

**STOOKEY, TOOELE COUNTY, UTAH.**

On the highest point of the Stansbury Mountains, south of Clover Creek, about 8 miles in an air line southwest of Clover post office. The nearest water and forage is at Alonzo S. Stookey's ranch, about 1 mile west of Clover post office. There is a road and trail from this ranch to summit of peak. There is a small spring three-quarters of a mile west of the peak, but grass is scarce on the mountain.

Signal: A rock cairn 6 feet at base and 7 feet high with spruce tree in center.

Station mark: A United States Geological Survey triangulation tablet set in solid rock under center of tree.

[Latitude 40° 14' 56.084". Longitude 112° 32' 34.501".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	Log. meters.	Miles.
Lookout.....	7 38 27.07	187 37 07.61	4.3417620	13.649
Skull.....	29 28 59.36	209 22 02.76	4.4935103	19.358
Round Top.....	51 44 56.30	231 37 43.99	4.3052294	12.548
Castle.....	68 50 01.00	248 34 00.60	4.5773784	23.482
Granite.....	78 02 47.07	257 34 37.03	4.8019684	39.384
Scrub.....	131 45 50.06	311 29 19.21	4.6834340	29.977
Tree.....	137 33 29.25	317 26 20.78	4.3642907	14.376
Deseret.....	163 18 33.45	343 15 20.46	4.3882959	15.193
South.....	197 24 07.41	17 27 34.74	4.4017603	15.671
St. John.....	211 58 16.22	32 01 40.61	4.1486761	8.750
Clover.....	214 47 28.32	34 50 39.83	4.0881213	7.612
St. John railroad station.....	220 47 23.10	40 52 32.84	4.2378595	10.745
Herriman.....	236 02 15.02	56 15 38.47	4.5475088	21.921
East Poplar.....	246 49 10.55	66 57 08.21	4.2781866	11.791
Lone Cedar.....	257 37 16.85	77 50 07.78	4.4598684	17.915
Lake.....	265 39 42.42	86 02 54.60	4.7078210	31.708
Lava.....	275 24 11.32	95 39 19.87	4.5238373	20.758
Topliff.....	289 58 08.14	110 10 55.67	4.4762747	18.605
Faust.....	295 37 37.31	115 43 34.98	4.1623178	9.030
Nebo.....	305 59 59.53	126 29 58.93	4.9151530	51.110
Boulter.....	312 32 49.19	132 46 13.34	4.6039360	24.962
Center.....	314 16 05.41	134 22 21.91	4.2853657	11.987
Sable.....	331 07 52.86	151 15 41.06	4.4529603	17.632
Vernon.....	331 18 39.41	151 22 54.03	4.2895084	12.102
Bennion.....	359 28 46.63	179 28 53.87	4.4672738	18.223

**SUNRISE, TOOELE AND JUAB COUNTIES, UTAH. (Not occupied.)**

The highest point of a prominent, long mountain at the west end of Mead Valley and probably on county line between Juab and Tooele counties.

[Latitude 39° 49' 10.600". Longitude 112° 04' 13.413".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	Log. meters.	Miles.
Bennion.....	114 42 18.99	294 24 14.98	4.6447713	27.423
Sable.....	125 20 29.33	305 10 04.43	4.4525140	17.614
Boulter.....	152 15 55.52	332 11 04.66	4.3637293	14.358
Nebo.....	272 02 05.79	92 13 47.89	4.4166094	16.217

**TANK, UTAH COUNTY, UTAH. (Not occupied.)**

Water tank on railroad between Lehi Junction and Topliff, about 2 miles east of Cedar Fort.

[Latitude 40° 18' 56.853". Longitude 112° 04' 23.461".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	Log. meters.	Miles.
Lava.....	32 17 32.85	212 14 29.00	4.1000052	7.823
Herriman.....	139 04 53.73	319 00 02.39	4.2092003	10.059
Cedar Point.....	215 24 48.47	35 28 22.52	4.1286278	8.356
Ant Hill.....	342 11 36.37	162 14 35.10	4.3309479	13.314

**TIMPANAGOS FLAG, UTAH COUNTY, UTAH. (No check; not occupied.)**

Metal flag near the summit of Timpanagos Mountain, a very high mountain about 12 miles east of Lehi. Flag was established by citizens of Pleasant Grove in 1915.

[Latitude 40° 23' 27.875". Longitude 111° 38' 43.269".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	Log. meters.	Miles.
Lake.....	64 39 15.12	244 27 37.82	4.4496181	17.497
Cedar Point.....	95 18 29.51	275 05 25.44	4.4570313	17.798

**TOOELE, TOOELE COUNTY, UTAH. (No check; not occupied.)**

Center of cupola on a building (probably school) in town of Tooele.

[Latitude 40° 32' 05.546". Longitude 112° 17' 09.380".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	Log. meters.	Miles.
South.....	61 41 27.17	241 34 54.28	4.2092018	10.059
Deseret.....	73 58 11.63	253 44 57.28	4.4769088	18.632

**TOPLIFF, TOOELE COUNTY, UTAH. (Not occupied.)**

Center of derrick near water tank at railroad station and post office, Topliff.

[Latitude 40° 09' 22.862". Longitude 112° 12' 45.439".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	Log. meters.	Miles.
Sable.....	27 33 54.29	207 28 56.73	4.3749297	14.733
Bennion.....	55 47 34.06	235 34 55.84	4.5288057	20.997
Center.....	77 28 07.62	257 21 37.19	4.1669933	9.127
Stookey.....	110 10 55.67	289 53 08.14	4.4762747	18.605
Lava.....	216 04 20.70	36 06 41.07	3.9412791	5.428
Boulter.....	355 18 12.30	175 18 50.08	4.2304960	10.564



**VERNON, TOOELE COUNTY, UTAH. (Not occupied.)**

Center of cupola on Mormon Church at Vernon, a post office in Rush Valley.

[Latitude 40° 05' 41.955". Longitude 112° 25' 59.801".]

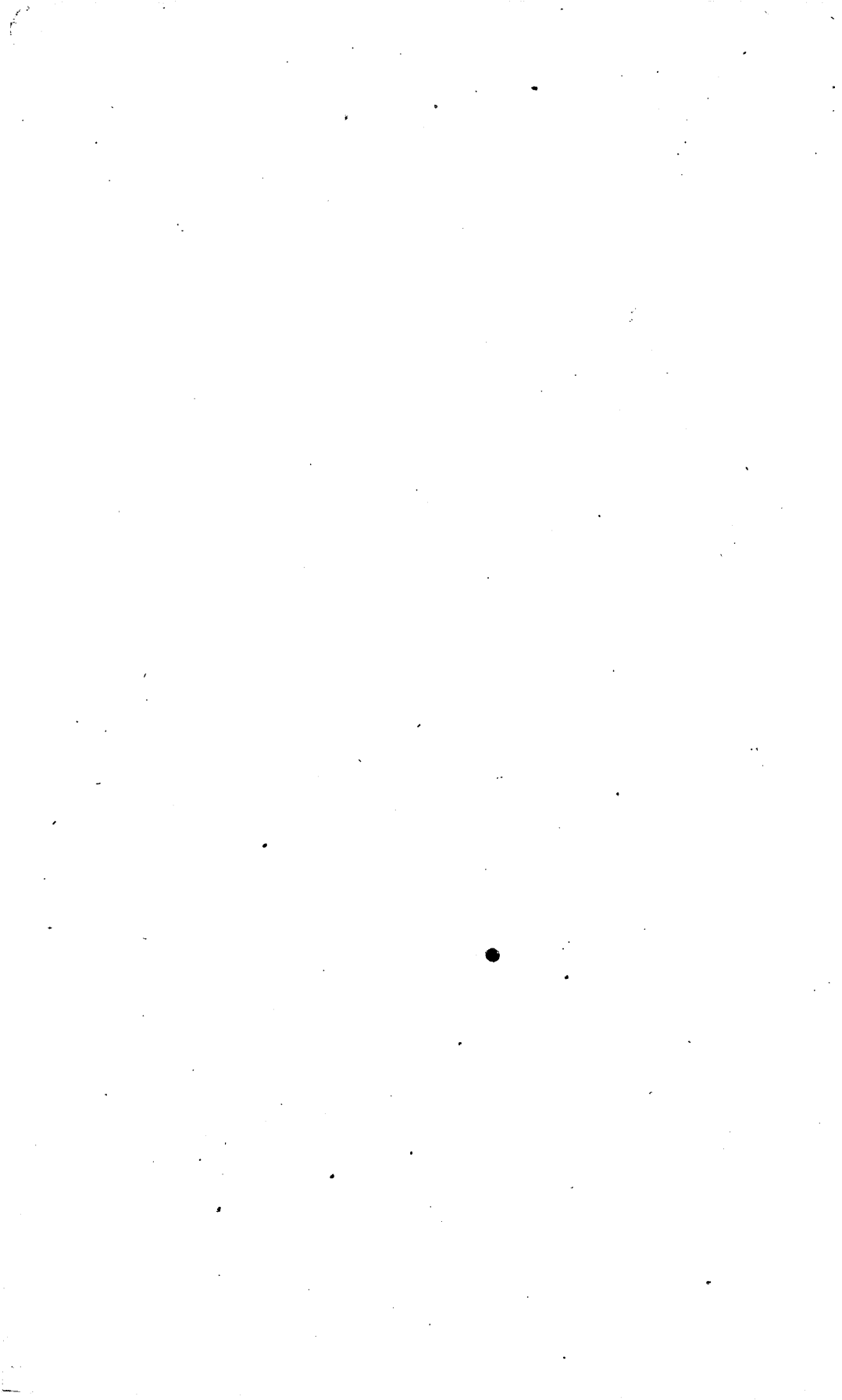
To station—	Azimuth.	Back azimuth.	Distance.	
			<i>Log. meters.</i>	<i>Miles.</i>
Bennion .....	36 38 53.50	216 34 46.80	4.1830661	9.471
Stookey .....	151 22 54.03	331 18 39.41	4.2895084	12.102
Center .....	231 02 13.66	51 04 15.26	3.7594769	3.571
Boulter .....	296 32 11.18	116 41 20.07	4.3544334	14.053
Sabie .....	330 59 12.46	151 02 46.03	4.2107957	10.096

**Y, UTAH COUNTY, UTAH. (Not occupied.)**

Bottom of a large "Y" placed on side of mountain by students of Brigham Young College, in Provo. It is just above the town of Provo.

[Latitude 40° 14' 54.448". Longitude 111° 37' 14.161".]

To station—	Azimuth.	Back azimuth.	Distance.	
			<i>Log. meters.</i>	<i>Miles.</i>
Boulter .....	61 12 44.52	240 50 28.79	4.7489157	34.855
Ant Hill .....	68 07 20.64	247 52 47.81	4.5379087	21.442
Cedar Point .....	121 07 48.42	300 53 47.82	4.5535612	22.229



# UTAH AND IDAHO.

## TRIANGULATION STATIONS.

Logan quadrangle.

CACHE AND RICH COUNTIES, UTAH; ONEIDA COUNTY, IDAHO.

During the field season of 1913 triangulation was extended over part of Cache County, Utah, by H. H. Hodgeson. The old stations, Swan Creek and Red Spot (see pp. 134, 135), both in Rich County, were occupied as base stations.

The following positions were computed on North American datum, accepting the azimuth and distance Swan Creek to Red Spot given in Bulletin 496 (pp. 354, 355).

BEAVER, CACHE COUNTY, UTAH. (Not occupied; unchecked.)

Summit near point of ridge between Beaver and Logan creeks and about 0.7 mile north from the junction of these creeks. Elevation above sea, 8,845 feet.

[Latitude 41° 57' 50.9". Longitude 111° 33' 27.0'.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	Log. meters.	Miles.
Logan Peak.....	25 32 43	205 26 20	4.48851	19.14
Naomi.....	59 09 06	239 04 24	4.05430	7.04

BERGESON, CACHE COUNTY, UTAH.

On summit of bare hill about 3 miles southwest from Cornish Railroad station on land belonging to Ephraim Bergeson and locally known as Bergeson Hill. This station can be easily reached by road and trail from the ranch of Ephraim Bergeson, which is located about 2 miles south of Cornish Railroad station. Can take animals to station. Approximate elevation above sea 6,000 feet.

Signal: Six-foot cairn directly over station mark.

Station mark: Bronze triangulation tablet cemented in rock.

Reference marks: Cross cut in quartz rock 54.7 feet distant from center in true azimuth 124° 22'; cross cut in quartz rock 69.3 feet distant from center in true azimuth 147° 00'. Distance between witness marks is 28.3 feet.

[Latitude 41° 59' 38.94". Longitude 111° 59' 58.99'.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	Log. meters.	Miles.
Wellsville.....	1 37 50 81	181 37 18.96	4.5893712	24.139
Naomi.....	288 38 56.78	108 51 58.88	4.4541738	17.682
Logan Peak.....	322 53 26.53	143 04 45.48	4.5909419	24.227
Newton.....			4.04870	6.95
Logan College.....			4.50600	19.92
Logan Temple.....			4.50770	20.00
Cache Junction elevator.....			4.24263	10.86
Smart Mountain.....			4.17364	9.27
T. 14 N., Rs. 1 E. and 1 W. Salt Lake meridian, crossroads at corner to secs. 13, 18, 19, and 24.			4.00733	6.32

**CACHE JUNCTION ELEVATOR, CACHE COUNTY, UTAH. (Not occupied.)**

Center of gray-roofed elevator at Cache Junction, Utah.

Signal and station mark: Center of elevator.

[Latitude 41° 50' 12.4". Longitude 112° 00' 13.6".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	<i>Log. meters.</i>	<i>Miles.</i>
Wellsville.....	2 03 27	182 03 05	4.32972	13.28
Logan Peak.....	299 42 09	119 53 36	4.43888	17.07
Naomi.....			4.45571	17.74
Bergeson.....			4.24263	10.86

**LOGAN COLLEGE, CACHE COUNTY, UTAH. (Not occupied.)**

Spire on main building of Utah State College at Logan.

Signal: Center of spire.

[Latitude 41° 44' 28.0". Longitude 111° 48' 49.8".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	<i>Log. meters.</i>	<i>Miles.</i>
Wellsville.....	57 09 28	237 01 31	4.29552	12.27
Logan Peak.....	290 34 37	110 38 28	3.93464	5.35
Bergeson.....			4.50600	19.92

**CLARKSTON, CACHE COUNTY, UTAH. (Not occupied; unchecked.)**North summit of Clarkston Mountains about 8 miles west from the town of Clarkston.  
Approximate elevation above sea, 8,245 feet.

Signal: Apparent highest point of summit.

[Latitude 41° 55' 28.7". Longitude 112° 07' 37.1".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	<i>Log. meters.</i>	<i>Miles.</i>
Naomi.....	272 01 52	92 19 58	4.57451	23.33
Logan Peak.....	304 22 04	124 38 29	4.61623	25.68

**LOGAN PEAK, CACHE COUNTY, UTAH.**

On summit of Logan Peak, on south side of Logan River and about 7 miles southeast from the city of Logan. This station can easily be reached from Logan River by road and log slides up Spring Creek. The nearest water is in the head of Providence Canyon, just south of station. Elevation of Logan Peak is 9,723 feet. Can take animals to station.

Signal: Bushy top pine guyed by wires. Limestone cairn around base of pine and the guy wires are anchored by stone mounds.

Station mark: Bronze triangulation tablet cemented in limestone rock and directly beneath signal.

Reference marks: Cross cut in limestone rock 40.7 feet distant from center, true azimuth 261° 31'. Cross cut in limestone rock 46.7 feet distant from center, true azimuth 37° 09'.

[Latitude 41° 42' 49.88". Longitude 111° 43' 01.43'']

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	Log. meters.	Miles.
Sharp.....	1 38 18	181 37 54	4.47482	18.54
Tit.....	9 55 56	189 52 56	4.56015	22.57
Wellsville Tabernacle.....	64 45 17	244 36 43	4.29649	12.30
Wellsville.....	72 44 37.44	252 32 49.04	4.4118940	16.042
T. 11 N., R. 1 W. Salt Lake meridian, north-west corner of sec. 27.....	76 13 46	256 04 32	4.29770	12.33
T. 11 N., R. 1 W. Salt Lake meridian, north corner of secs. 1 and 2.....	96 04 44	275 57 01	4.20924	10.06
Tps. 11 and 12 N., Rs. 1 E. and 1 W. Salt Lake meridian, corner to.....	96 43 30	276 36 33	4.16454	9.08
Logan Temple.....	104 01 08	283 56 44	3.97671	5.89
Logan College.....	110 38 28	290 34 37	3.93464	5.35
Narrows.....	117 40 54	297 27 46	4.48895	19.16
Cache Junction elevator.....	119 53 36	299 42 09	4.43888	17.07
Clarkston.....	124 38 29	304 22 04	4.61623	25.68
Bergeson.....	143 04 45.48	322 53 26.53	4.5909419	24.227
T. 14 N., Rs. 1 E. and 1 W. Salt Lake meridian, crossroads at corner to secs. 13, 18, 19, and 24..	150 24 04	330 16 58	4.47418	18.52
Smart Mountain.....	165 34 19	345 29 59	4.55594	22.35
Naomi.....	189 04 26.85	9 06 08.41	4.3475412	13.832
Beaver.....	205 26 20	25 32 43	4.48851	19.14
Swan Creek.....	215 09 59.71	35 20 05.09	4.5595565	22.538
Red Spot.....	289 32 04.28	109 44 15.92	4.4317904	16.794

**LOGAN TEMPLE, CACHE COUNTY, UTAH. (Not occupied.)**

West spire on Mormon Temple in city of Logan, Utah.

Signal and station mark: Center of west spire.

[Latitude 41° 44' 04.1". Longitude 111° 49' 39.3'']

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	Log. meters.	Miles.
Wellsville.....	57 08 57	237 01 33	4.26449	11.42
Logan Peak.....	283 56 44	104 01 08	3.97671	5.89
Bergeson.....			4.50770	20.00

**NAOMI, CACHE COUNTY, UTAH.**

On highest point of rocky, limestone mountain (occupied by the Wheeler Survey) locally known as Naomi Peak. At head of Smithfield and Tony Grove canyons, about 9 miles northeast from town of Smithfield, Cache County, Utah. This station overlooks Cache Valley. Best route to peak is up Tony Grove Creek (by trail from Tony Grove ranger station) to within 1.5 miles of its head, thence south into saddle and follow ridge to station. Can take animals to within half a mile of station. Elevation above sea, 9,980 feet.

Signal: Bushy top pine set in mound of stone and directly over station mark.

Station mark: Bronze triangulation tablet cemented in limestone rock at center of mound built by Wheeler Survey.

Reference marks: Cross cut in limestone rock 17.1 feet distant from center, true azimuth 247° 50'. Cross cut in limestone rock 18.2 feet distant from center, true azimuth 353° 44'.

[Latitude 41° 54' 42.35". Longitude 111° 40' 29.09".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	Log. meters.	Miles.
Logan Peak .....	9 06 08.41	189 04 26.85	4.3475412	13.832
Wellsville .....	43 33 58.44	223 20 27.17	4.6115960	25.407
Newton .....	86 19 42	266 08 15	4.37652	14.79
Clarkston .....	92 19 58	272 01 52	4.57451	23.33
Bergeson .....	108 51 58.88	288 38 56.78	4.4541738	17.682
Beaver .....	239 04 24	59 09 06	4.05430	7.04
Swan Creek .....	246 13 09.80	66 21 34.52	4.2786645	11.804
Red Spot .....	324 43 52.93	144 54 24.51	4.5798491	23.616
Cache Junction elevator .....			4.45571	17.74
Narrows .....			4.50172	19.73
Wellsville Tabernacle .....			4.57057	23.12
T. 11 N., R. 1 W., northwest corner of sec. 27 .....			4.54540	21.81
T. 11 N., R. 1 W., north corner of secs. 1 and 2 .....			4.45028	17.52
Tps. 11 and 12 N., Rs. 1 E. and 1 W., corner of .....			4.43328	16.85

**NARROWS, CACHE COUNTY, UTAH. (Not occupied.)**

Summit of a rocky hill on north side of Bear River at Cache Junction Narrows, about 5 miles northwest of Cache Junction, Utah. Approximate elevation above sea, 5,500 feet.

Signal: Apparent highest point of hill.

[Latitude 41° 50' 32.4". Longitude 112° 02' 44.8".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	Log. meters.	Miles.
Logan Peak .....	297 27 46	117 40 54	4.48895	19.16
Wellsville .....	352 54 34	172 55 53	4.34514	13.76
Naomi .....			4.50172	19.73

**NEWTON, CACHE COUNTY, UTAH. (Not occupied.)**

On bare summit of Newton Hill, about 2 miles northeast from town of Newton and 2 miles southwest from town of Trenton. Approximate elevation above sea, 5,700 feet.

Signal: Tripod 12 feet high, 2 by 4 inch, with targets.

Station mark: None.

[Latitude 41° 43' 51.7". Longitude 111° 57' 39.3".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	Log. meters.	Miles.
Wellsville .....	8 46 09	188 44 05	4.45408	17.68
Naomi .....	266 08 15	86 19 42	4.37652	14.79
Bergeson .....			4.04870	6.95

**RED SPOT, RICH COUNTY, UTAH.**

On rather high flat-topped ridge at source of Old Canyon Creek, a stream flowing into Bear River. It is about 12 miles a little south of west of Randolph. Station can be reached by road up Old Canyon 7 or 8 miles, thence on horseback the best way you can find up ridge. Numerous quaking asp trees to go through. It can also be reached by going up the Logan road, or from the north by going by the Twin Peaks on horseback.

Signal: A cairn 6 feet high with tree in center.

Station mark: A triangulation tablet set in rock under center of cairn.

[Latitude 41° 37' 55.49". Longitude 111° 24' 41.02'']

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	Log. meters.	Miles.
Sharp.....	51 54 01	231 41 27	4.52562	20.84
Wellsville.....	91 46 42.99	271 42 44.02	4.7002198	31.158
Logan Peak.....	109 44 15.92	289 32 04.28	4.4317904	16.794
Naomi.....	144 54 24.51	324 43 52.93	4.5798491	23.616
Swan Creek.....	173 27 04.71	353 24 56.06	4.5905941	
Lakeview.....	202 18 41.01	22 25 54.81	4.5964006	
South Twin.....	209 18 49.69	29 21 55.86	4.1210225	
Red.....	216 44 55.03	36 59 58.54	4.7169770	
Nugget.....	258 15 58.51	78 39 24.61	4.6983003	
Randolph.....	258 50 18.49	78 59 20.87	4.2843303	
Rex.....	264 03 42.43	84 16 23.13	4.4253802	
Limestone.....	283 04 49.60	103 12 05.02	4.1927772	
Woodruff.....	300 48 12.21	120 58 06.11	4.3830813	

**SHARP, CACHE COUNTY, UTAH. (Not occupied.)**

Sharp timbered west summit of mountain off south edge Logan quadrangle.

Signal: Apparent highest point.

[Latitude 41° 26' 43.0". Longitude 111° 43' 38.2'']

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	Log. meters.	Miles.
Logan Peak.....	181 37 54	1 38 18	4.47482	18.54
Red Spot.....	231 41 27	51 54 01	4.52562	20.84
Swan Creek.....			4.80160	39.35

**SMART MOUNTAIN, ONEIDA COUNTY, IDAHO. (Not occupied.)**The summit of a low mountain locally known as Mount Smart,<sup>1</sup> about 2 miles north-west from town of Franklin, Idaho. Approximate elevation above sea, 5,215 feet.

Signal: Large permanent flagpole.

Station mark: Large permanent flagpole.

[Latitude 42° 01' 38.8". Longitude 111° 49' 31.0'']

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	Log. meters.	Miles.
Wellsville.....	20 11 44	200 04 13	4.65608	28.15
Logan Peak.....	345 29 59	165 34 19	4.55594	22.35
Bergeson.....			4.17364	9.27

**SWAN CREEK, RICH COUNTY, UTAH.**

On highest point of timbered mountain at source of Swan Creek and just above Garden City on Bear Lake. There are higher mountains west of this point.

Signal: A tree trimmed up.

Station mark: A triangulation tablet set in rock 0.7 meter south-southeast from signal.

[Latitude 41° 53' 49.93". Longitude 111° 27' 54.01'']

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	Log. meters.	Miles.
Logan Peak.....	35 20 05.09	215 09 59.71	4.5595505	22.538
Naomi.....	66 21 34.52	246 13 09.80	4.2786645	11.804
Sharp.....			4.80160	39.35
Lakeview.....	276 21 25.74	96 30 50.08	4.2912251	
South Twin.....	338 05 27.40	158 10 42.99	4.4667274	
Redspot.....	353 24 56.06	173 27 04.71	4.5905941	

<sup>1</sup> See p. 173.

**TIT, CACHE COUNTY, UTAH. (Not occupied.)**

The timbered west summit of a mountain group known in the vicinity of Logan as the Eastern Range.

Signal: Apparent highest point.

[Latitude  $41^{\circ} 23' 30.3''$ . Longitude  $111^{\circ} 47' 31.2''$ .]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	Log. meters.	Miles.
Wellsville.....	146 45 56	326 37 08	4.52620	20.87
Logan Peak.....	189 52 56	9 55 56	4.56015	22.57
Bergeson.....			4.83950	42.94

**T. 11 N., R. 1 W. SALT LAKE MERIDIAN, CACHE COUNTY, UTAH. (Three-point station; unchecked.)**

North corner to secs. 1 and 2. Unmarked stone in place.

Station mark: Section corner stone.

[Latitude  $41^{\circ} 43' 44.9''$ . Longitude  $111^{\circ} 54' 38.0''$ .]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	Log. meters.	Miles.
Wellsville.....	42 15 39	222 11 34	4.10346	7.89
Logan Peak.....	275 57 01	96 04 44	4.20924	10.06
Naomi.....			4.45028	17.52

**T. 14 N., RS. 1 E. AND 1 W. SALT LAKE MERIDIAN, CACHE COUNTY, UTAH. (Three-point station; checked.)**

Center of crossroads at corner of secs. 13, 18, 19, and 24.

Station mark: None.

[Latitude  $41^{\circ} 56' 49.2''$ . Longitude  $111^{\circ} 53' 40.4''$ .]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	Log. meters.	Miles.
Wellsville.....	16 22 19	196 17 35	4.54415	21.75
Logan Peak.....	330 16 58	150 24 04	4.47418	18.52
Bergeson.....			4.00733	6.32

**T. 11 N., R. 1 W. SALT LAKE MERIDIAN, CACHE COUNTY, UTAH. (Three-point station; unchecked.)**

Northwest corner of sec. 27. No stone in place.

Station mark: None.

[Latitude  $41^{\circ} 40' 15.9''$ . Longitude  $111^{\circ} 56' 54.7''$ .]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	Log. meters.	Miles.
Wellsville.....	61 13 44	241 11 10	3.78718	3.81
Logan Peak.....	256 04 32	76 13 46	4.29770	12.33
Naomi.....			4.54540	21.81

**TPS. 11 AND 12 N., RS. 1 E. AND 1 W. SALT LAKE MERIDIAN, CACHE COUNTY, UTAH. (Three-point station; unchecked.)**

Unmarked stone in place.

Station mark: Township corner stone.



[Latitude 41° 43' 44.9". Longitude 111° 53' 29.0".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	Log. meters.	Miles.
Wellsville.....	47 10 17	227 05 26	4.14028	8.58
Logan Peak.....	276 36 33	96 43 30	4.16454	9.08
Naomi.....			4.43328	16.85

**WELLSVILLE, CACHE COUNTY, UTAH.**

On bare cone (north summit) of Wellsville Mountains, about 5 miles west from town of Wellsville. First summit north from saddle at head of Brushy Canyon. This station can easily be reached by going up Red Point Ridge from the town of Wellsville (this ridge separates Pine and Brushy canyons) to within 1,000 feet of the summit, the trail then leads into Brushy Canyon and up the canyon to the saddle, thence north to station. Small but excellent spring at head of Brushy. Can take animals to station. Approximate elevation above sea, 9,355 feet.

Signal: Six-foot cairn directly over station mark.

Station mark: Bronze triangulation tablet cemented in limestone rock.

Reference marks: Cross cut in limestone rock 20.15 feet distant from center, true azimuth 303° 38'. Cross cut in limestone rock 109.0 feet distant from center, true azimuth 32° 51'.

[Latitude 41° 38' 40.28". Longitude 112° 00' 46.76".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	Log. meters.	Miles.
Narrows.....	172 55 53	352 54 34	4.34514	13.76
Bergeson.....	181 37 18.96	1 37 50.81	4.5893712	24.139
Cache Junction elevator.....	182 03 05	2 03 27	4.32972	13.28
Newton.....	188 44 05	8 46 09	4.45408	17.68
T. 14 N., Rs. 1 E. and 1 W. Salt Lake meridian, crossroads at corner of secs. 13, 18, 19, 24.....	196 17 35	16 22 19	4.54415	21.75
Smart Mountain.....	200 04 13	20 11 44	4.65608	28.15
T. 11 N., R. 1 W. Salt Lake meridian, north corner of secs. 1 and 2.....	222 11 34	42 15 39	4.10346	7.89
Naomi.....	223 20 27.17	43 33 58.44	4.6115960	25.407
Tps. 11 and 12 N., Rs. 1 E. and 1 W. Salt Lake meridian, corner to.....	227 05 26	47 10 17	4.14028	8.58
Logan College.....	237 01 31	57 09 28	4.29552	12.27
Logan Temple.....	237 01 33	57 08 57	4.26449	11.42
T. 11 N., R. 1 W. Salt Lake meridian, north- west corner sec. 27.....	241 11 10	61 13 44	3.78718	3.81
Logan Peak.....	252 32 49.04	72 44 37.44	4.4118940	16.042
Red Spot.....	271 42 44.02	91 46 42.99	4.7002198	31.158
Wellsville Tabernacle.....	276 25 23	96 28 37	3.83233	4.22
Tit.....	326 37 08	146 45 56	4.52620	20.87

**WELLSVILLE TABERNACLE, CACHE COUNTY, UTAH. (Not occupied.)**

Spire on Mormon Tabernacle in town of Wellsville, Utah.

Signal: Center of spire.

[Latitude 41° 38' 15.6". Longitude 111° 55' 54.9".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	Log. meters.	Miles.
Wellsville.....	96 28 37	276 25 23	3.83233	4.22
Logan Peak.....	244 36 43	64 45 17	4.29649	12.30
Naomi.....			4.57057	23.12



## COLORADO AND WYOMING.

### TRIANGULATION STATIONS.

Boulder 15', Eagle, Glenwood Springs, Home, Jackson, James Peak, Kremmling, Leadville, Leon Peak, Longs Peak, Mount Powell, North Park, Pagoda, Rabbit Ears, Rifle, and Snow Mass quadrangles, Colo.; Laramie and Sherman quadrangles, Wyo.

BOULDER, DELTA, EAGLE, GARFIELD, GRAND, GUNNISON, JACKSON, LARIMER, MESA, PITKIN, RIO BLANCO, ROUTT, AND SUMMIT COUNTIES, COLO.; ALBANY AND LARAMIE COUNTIES, WYO.

For this work 8 old stations were reoccupied, 34 new positions determined, and 20 secondary points cut in. The field work on the Boulder, James Peak, Longs Peak, and Mount Powell quadrangles was done by C. F. Urquhart during the season of 1913. That for the Eagle, Glenwood Springs, Mount Jackson, Kremmling, Leadville, Leon Peak, Pagoda, Rabbit Ears, Rifle, and Snow Mass was done by C. B. Kendall during the season of 1914.

During the season of 1915, C. B. Kendall did the field work on the Laramie and Sherman quadrangles in Wyoming and the Home and North Park quadrangles in Colorado.

Positions are based on the United States Coast and Geodetic Survey stations Horsetooth-Twin, and are carried south and west to a tie with positions based on United States Coast and Geodetic Survey stations Tavaputs, Mount Waas at Leon Peak, and North Mam and with triangulation from the north at North Mam and Rio Blanco. A tie was also made with previous work at stations Hogback, Sugarloaf on the east and Holy Cross on the south.

#### ARAPAHOE, BOULDER-GRAND COUNTIES, COLO.

Arapahoe Mountain is on the line between Boulder and Grand counties, Colo. It is at the source of Boulder Creek and the highest of several peaks in the vicinity. There is a wagon road from Eldora to the summit of the range or the county line and a trail on the west side. This road crosses the range about 2 miles south of the peak. Parties can camp at an old mine on the east side of the range at timber line. From this mine a trail goes east up the ridge, then north and west to the summit of a high mountain northeast of the mine. From summit of this mountain go west and north along rough ridge to peak.

Station mark: A rock monument  $8\frac{1}{2}$  feet high and 31 feet in circumference is on highest point of peak. There is a copper tablet in center of large flat rock on top of monument, stamped "Erected by the City of Boulder in 1910—Mann & Heinze."

Reference mark: Bronze tablet set in solid rock 10.76 feet east of signal; true azimuth  $280^{\circ} 03' 53''$ .

[Latitude 40° 01' 36.038". Longitude 105° 38' 59.196".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	Log. meters.	Miles.
Ptarmigan.....	40 55 54.52	220 41 26.94	4.6922537	30.592
Byers.....	54 45 28.48	234 34 02.18	4.4928574	19.329
Elk.....	110 24 03.49	290 05 35.01	4.6380472	27.002
Parkview.....	129 19 53.27	309 01 04.89	4.7273518	33.167
Richthofen.....	157 09 32.33	337 00 03.85	4.7275240	33.180
Hague.....	180 22 41.58	0 22 50.79	4.7062917	31.597
Longs Peak.....	186 44 58.07	6 46 19.98	4.4073647	15.875
Hogback.....	238 45 56.46	59 03 27.14	4.6538537	28.003
Bald.....	246 43 47.35	66 47 33.67	3.9578731	5.639
Sugarloaf.....	269 50 30.50	89 59 27.02	4.2962388	12.291

**BALD MOUNTAIN, BOULDER COUNTY, COLO.**

High, round-topped peak (end of spur from Continental Divide) 4 miles southwest of Ward, Colo. Locally known as Bald Mountain.

Station mark: Aluminum tablet under rock monument.

[Latitude 40° 03' 32.141". Longitude 105° 33' 07.424".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	Log. meters.	Miles.
Arapahoe.....	66 47 33.67	246 43 47.35	3.9578731	5.639
Longs Peak.....	166 18 14.26	346 15 49.34	4.3508207	13.937
Twin.....	186 41 23.57	6 42 45.28	4.4096472	15.959
Lillie.....	187 24 10.80	7 25 38.93	4.3987818	15.564
Sugarloaf.....	287 12 38.19	107 17 48.57	4.0782957	7.441

**BLACK, LARIMER COUNTY, COLO. (Not occupied.)**

On highest part of Black Mountain which lies between the North Fork of Lone Pine Creek and Sheep Creek, about 8 miles west of Cherokee Park.

Station and signal: Highest tree on top of mountain.

[Latitude 40° 52' 19.4". Longitude 105° 38' 17.1".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	Log. meters.	Miles.
North Bald.....	25 39 16.6	205 36 54.2	4.07197	7.34
Little Bald.....	81 34 13.9	261 29 34.8	4.00428	6.28
Bull.....	107 09 02.8	287 01 21.2	4.23719	10.73
Dead Tree.....	183 27 40.7	3 27 57.0	3.99174	6.10
Gale.....	191 56 29.6	11 58 23.6	4.29299	12.20
Cap Rock.....	233 36 24.7	53 43 43.9	4.28949	12.10

**BUFFALO, GRAND-JACKSON COUNTIES, COLO. (Not occupied.)**

On Buffalo Mountain, a peak of the east branch of the Park Range, on the Continental Divide and on line between Grand and Jackson counties, at the head of the West Fork of Troublesome Creek on the south and Arapahoe Creek on the north, about 12 miles west of Parkview Mountain and 25 miles north of the town of Kremmling on the Denver & Salt Lake (Moffat) Railroad.

Station mark and signal: Rock cairn on highest point.

[Latitude 40° 21' 40.1". Longitude 106° 15' 54.6".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	Log. meters.	Miles.
Kremmling.....	11 20 37	191 17 16	4.57584	23.40
Rabbit Ears.....	104 09 53	283 56 28	4.48005	18.77
Parkview.....	287 13 13	107 18 15	4.06171	7.16
Elk.....	332 05 20	152 10 40	4.39787	15.54

**BULL, LARIMER COUNTY, COLO.**

On the highest part of Bull Mountain which lies between Larimer River and Sand Creek and just south of where the Boulder Ridge road crosses the "Sand Gap," from which place the station can be reached by saddle animals. The mountain is heavily timbered on the southwest end and has dead trees on the extreme top.

Signal: Pine tree nailed in fork of a large dead pine. White cloth was tacked on the trunk of the dead tree.

Station mark: Bronze tablet in sandstone set 2 feet in the ground 2.65 feet southwest of signal; true azimuth  $18^{\circ} 00'$ .

[Latitude  $40^{\circ} 55' 04.18''$ . Longitude  $105^{\circ} 50' 01.80''$ .]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	Log. meters.	Miles.
Shipman.....	64 18 38.45	244 09 04.88	4.3577621	14.162
Red.....	135 17 40.50	315 13 43.27	4.0800898	7.472
Jelm.....	148 57 45.15	328 52 08.02	4.3665273	14.450
Gale.....	235 23 59.04	55 33 35.26	4.3967232	15.491
Dead Tree.....	254 30 45.53	74 38 44.00	4.2484522	11.010
Black.....	287 01 21.2	107 09 02.8	4.237191	10.73
Little Bald.....	315 11 50.18	135 14 52.38	3.9662174	5.749

**BYERS, GRAND COUNTY, COLO.**

This station is on the highest point of Byers Peak, a fairly well known point on the range between Williams River and Fraser Creek at the source of Rough Gulch. There is a trail from the Horseshoe ranger station on Williams River up Rough Gulch and across the ridge to Fraser, a small town on Denver & Salt Lake Railroad. This trail across ridge is about 1.5 miles north of the peak. From the summit of ridge horses can be ridden along ridge south to within a very short distance of station.

Signal: A rock cairn 6 or 7 feet at base and 8 feet high.

Station mark: Hole in solid rock 6.4 feet west of signal; true azimuth  $87^{\circ} 39'$ .

[Latitude  $39^{\circ} 51' 52.680''$ . Longitude  $105^{\circ} 56' 48.103''$ .]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	Log. meters.	Miles.
Ptarmigan.....	19 24 03.73	199 21 01.52	4.3102188	12.693
Holy Cross.....	46 15 54.32	225 55 26.33	4.8037768	39.548
Ute.....	51 47 46.36	231 42 46.97	4.1509118	8.796
Powell.....	71 10 08	250 55 02	4.55147	22.12
Eagles Nest.....	74 11 23	253 55 57	4.55469	22.29
Piney.....	83 59 51.80	263 38 43.17	4.6753682	29.425
Lone Peak.....	92 19 30.83	272 00 50.78	4.6185878	25.819
Kremmling.....	117 51 22.83	297 35 46.05	4.5924932	24.313
Elk.....	154 57 53.03	334 50 53.68	4.5619737	22.663
Parkview.....	162 45 29.24	342 38 11.23	4.7336831	33.654
Arapahoe.....	234 34 02.18	54 45 28.48	4.4928574	19.329

**CAP ROCK, LARIMER COUNTY, COLO.**

On the easternmost of three large rocks which form the summit of "Cap Rock," a well-known peak which lies just south of Fish Creek and about 3 miles southeast of Mr. Edwin Shaffer's ranch and residence and about 7 miles by road northwest of Virginia Dale stage station. Can be easily reached by taking road to south about  $\frac{1}{2}$  mile east of Mr. Shaffer's residence to foot of peak. Climb peak from the south end.

Signal: A pole quadripod with flags.

Station mark: Bronze tablet in solid rock under signal.

[Latitude 40° 58' 32.97". Longitude 105° 27' 06.90".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	Log. meters.	Miles.
North Bald.....	43 15 55.54	223 06 13.75	4.4831240	18.901
Black.....	53 43 43.9	233 36 24.7	4.28949	12.10
Dead Tree.....	83 31 10.86	263 24 08.14	4.1811197	9.429
Diamond.....	92 32 30	272 28 17	3.95602	5.615
Gale.....	123 35 01.77	303 29 36.10	4.1434427	8.646
Twin.....	242 31 07.75	62 38 23.72	4.2427743	10.867
Livermore.....	330 51 55.97	150 58 13.12	4.4436084	17.257

## CASTLE, EAGLE COUNTY, COLO.

In T. 3 S., R. 84 W., near north-south line between secs. 19 and 20. Station is on the highest (second from the east) of four large cliff-like rocks which are on the south-east end of Castle Mountain, a well-known peak at the head of Castle Creek, 9 miles due north of Eagle, a town on the Denver & Rio Grande Railroad. Can be best reached by wagon road from Eagle up Castle Creek to ranger station, thence by ranger trail to station. Animals can be ridden to foot of cliff about 0.25 mile south of station.

Station mark: A bronze triangulation tablet set in solid rock 8.5 feet northeast of signal; true azimuth 246° 09'.

Signal: A United States Forest Service fire lookout telephone tripod of hewn poles with United States flag at top. Tripod is weighted at the north end by a heap of stones.

[Latitude 39° 46' 20.991". Longitude 106° 49' 46.922".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	Log. meters.	Miles.
Sopris.....	26 59 00.42	206 46 14.44	4.8035053	39.523
Lookout.....	55 59 36.47	235 42 45.71	4.65917	28.35
Quartzite.....	75 36 59.95	255 18 17.73	4.6355323	26.846
Limestone.....	91 10 49.95	270 48 03.61	4.70614	31.59
Shingle.....	114 06 05	293 51 58	4.54888	21.89
Flatop.....	141 18 45.04	321 09 01.27	4.5382436	21.458
Rabbit Ears.....	194 21 56.40	14 30 25.30	4.8754314	46.643
Parkview.....	223 29 45.17	43 56 33.10	4.9329814	53.252
Kremmling.....	235 00 36.36	55 18 59.57	4.6970212	30.929
Piney.....	259 41 23.38	79 54 10.57	4.4620398	18.005
Holy Cross.....	318 26 59.35	138 40 19.66	4.6554340	28.105
Red Table.....	349 11 19	169 14 38	4.60021	24.75

## CHAIR, GUNNISON COUNTY, COLO. (Not occupied.)

On Chair Mountain, a well-known point on west side of Rock Creek about 3 miles southwest of Prospect.

Signal and station mark: Large rock monument on highest point.

[Latitude 39° 03' 29.9" (K); 39° 03' 24.0" (D). Longitude 107° 16' 53.5" (K); 107° 17' 00.6" (D).]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	Log. meters.	Miles.
Leon.....	92 58 08	272 36 53	4.68750	30.26
North Mam.....	125 03 57	305 41 48	4.79404	38.67
Divide.....	147 25 06	327 16 30	4.56391	22.765
Sunlight.....	168 20 26	348 16 43	4.61954	25.88
Sopris.....	(K)204 11 27	54 15 54	4.39324	(K)15.37
Sopris.....	(D)204 11 27.5	24 15 54	4.393718	(D)15.384

NOTE.—K=—value obtained by Kendall from the north; D=—value obtained by Douglas from the south. (See Bull. 122, p. 289.)

**CLARK, LARIMER-JACKSON COUNTIES, COLO. (Not occupied.)**

On highest point of Clarks Peak which is the highest peak of the Medicine Bow Range and is about 5 miles west of Chambers Lake.

Signal and station mark: Rock cairn.

[Latitude 40° 36' 25.22". Longitude 105° 55' 45.66".]

To station—	Azimuth.	Back azimuth.	Distance.	
			<i>Log. meters.</i>	<i>Miles.</i>
Shipman.....	153 06 59.48	333 01 12.02	4.4409279	17.151
Little Bald.....	207 31 39.13	27 38 25.18	4.4987823	19.594
North Bald.....	225 58 53.99	46 07 54.99	4.4323100	16.814
Hague.....	299 24 34.80	119 35 38.32	4.4408578	17.148
Richthofen.....	348 56 20.91	168 57 43.19	4.1915898	9.659

**DEAD TREE, LARIMER COUNTY, COLO.**

On the highest of several peaks forming the ridge lying at the headwaters of Trail Creek and between that creek and Sheep Creek. The ridge is fire scarred, leaving many dead trees, from which fact the station derived its name. Station is about 3 miles south of the Boulder Ridge road at a point about 3 miles east of the Eaton Dam and Reservoir. A road leads from this point to the foot of ridge, which can be easily ascended by following the trails.

Station mark: A bronze tablet in solid rock over which is erected a rock cairn 7 feet high with tree and flagpole in center.

Signal: The cairn.

[Latitude 40° 57' 36.95". Longitude 105° 37' 51.64".]

To station—	Azimuth.	Back azimuth.	Distance.	
			<i>Log. meters.</i>	<i>Miles.</i>
Black.....	3 27 57.0	183 27 40.7	3.99174	6.10
North Bald.....	15 38 57.35	195 36 17.49	4.3270751	13.195
Little Bald.....	43 11 42.20	223 06 46.30	4.1892380	9.607
Bull.....	74 38 44.00	254 30 45.53	4.2484522	11.010
Red.....	98 37 50.30	278 25 54.15	4.4119216	16.042
Jelm.....	117 43 48.71	297 30 12.12	4.5158409	20.379
Gale.....	200 13 00.16	20 14 37.57	4.0014830	6.235
Ames.....	225 52 43	46 01 55	4.43625	19.97
Diamond.....	250 30 44	70 33 33	3.80673	3.98
Cap Rock.....	263 24 08.14	83 31 10.86	4.1811197	9.429

**DIAMOND, LARIMER COUNTY, COLO. (Not occupied.)**

A well-known rocky peak locally known as "Diamond Rock." It is on the west side of the Cherokee Park-Tie Siding road and probably lies between Trail Creek and Sheep Creek.

Signal and station mark: Highest part of peak.

[Latitude 40° 58' 46.0". Longitude 105° 33' 33.2".]

To station—	Azimuth.	Back azimuth.	Distance.	
			<i>Log. meters.</i>	<i>Miles.</i>
Dead Tree.....	70 33 33	250 30 44	3.80673	3.98
Gale.....	160 34 22	340 33 10	3.88797	4.81
Cap Rock.....	272 28 17	92 32 30	3.95602	5.615

## DIVIDE, MESA COUNTY, COLO.

In T. 8 S., R. 91 W., near the southeast corner of township, on the highest point of ridge between East Divide and West Divide creeks, about 4 miles east of the Johnson Springs ranger station on West Divide Creek. Can be easily reached from Rifle or New Castle by wagon road up West Divide Creek to a point 1 mile north of Johnson Spring ranger station whence a good ranger's trail leads across the mountain into East Divide Creek. Follow trail east up mountain to where it reaches summit, then follow cattle trail southeast, keeping on up and out of timber. Station is on the second top north of the head of Mosquito Creek.

Station mark: A bronze tablet set in solid rock over which was erected a cairn 7 feet high.

Signal: A cairn 7 feet high with pole and flag in center.

[Latitude  $39^{\circ} 20' 10.2''$ . Longitude  $107^{\circ} 30' 37.0''$ .]

To station—	Azimuth.	Back azimuth.	Distance.	
			<i>Log. meters.</i>	<i>Miles.</i>
North Mam.....	100 32 24.36	280 18 53.44	4.49312	19.341
Quartzite.....	203 44 14.13	23 51 35.61	4.61372	25.531
Sunlight.....	228 37 19.73	48 42 19.07	4.17722	9.345
Chair.....	327 16 30	147 25 06	4.56391	22.765

**EAGLES NEST, SUMMIT-EAGLE COUNTIES, COLO.** (Not occupied; probably on line between Summit and Eagle counties.)

Highest peak of Eagles Nest Mountain, which is composed of several sharp peaks. It is on the Park Range or Gores Mountains, which is the divide between Blue River on the east and Piney River on the west, and is just northwest of Mount Powell and about 20 miles south of the town of Kremmling on the Denver & Salt Lake (Moffat) Railroad).

Signal and station mark: Center of highest peak.

[Latitude  $39^{\circ} 46' 33.5''$ . Longitude  $106^{\circ} 20' 58.7''$ .]

To station—	Azimuth.	Back azimuth.	Distance.	
			<i>Log. meters.</i>	<i>Miles.</i>
Holy Cross.....	18 15 32	198 10 30	4.55756	22.43
Piney.....	110 41 02	290 35 23	4.12912	8.36
Lone Peak.....	148 19 18	328 16 08	4.12782	8.34
Kremmling.....	179 35 56	359 35 51	4.44804	17.43
Byers.....	253 55 57	74 11 23	4.55469	22.29
Ute.....	267 15 47	87 26 32	4.36925	14.54
Ptarmigan.....	288 39 09	108 51 34	4.46700	18.21

## ELK, GRAND COUNTY, COLO.

On the highest point of Elk Mountain, well-known point about 6 miles (air line) north from Sulphur Springs and 12 or 13 miles north and east of Granby. There is a road and trail on east side of the mountain that horses can be ridden up, but there should be an easier route from the west side, as the slope is more gradual from that direction.

Signal: A cairn 6 feet high.

Station mark: A bronze tablet set in solid rock 5.5 feet from signal; true azimuth  $348^{\circ} 39' 08''$ .



[Latitude 40° 09' 43.630''. Longitude 106° 07' 40.314'']

To station—	Azimuth.	Back azimuth.	Distance.	
			<i>Log. meters.</i>	<i>Miles.</i>
Lone Peak.....	39 38 04.32	219 26 20.20	4.6105488	25.345
Kremmling.....	52 16 05.24	232 07 25.62	4.3835962	15.030
Flattop.....	78 57 46.93	258 20 53.73	4.9192948	51.599
Whiteley.....	119 16 06.32	299 01 58.01	4.5507498	22.085
Rabbit Ears.....	125 49 10.79	305 30 27.72	4.7031490	31.369
Buffalo.....	152 10 40	332 05 20	4.39787	15.54
Parkview.....	177 59 08.05	357 58 50.07	4.2716203	11.614
Arapahoe.....	290 05 35.00	110 24 03.49	4.6380472	27.002
Byers.....	334 50 53.68	154 57 53.03	4.5619737	22.663
Ptarmigan.....	350 29 45.75	170 33 41.57	4.7244747	32.948
Ute.....	353 59 42.14	174 01 40.81	4.6234818	26.112

**FLATTOP, GARFIELD COUNTY, COLO.**

In T. 1 N., R. 86 W., in the southwest corner of township, on the highest point (about the center) of Dome Peak, forming the extreme northeast end of White River Plateau, at the head of the White and Bear rivers and tributaries to Grand River. Plateau is locally known as the "Flattop." Sunnyside Creek heads on the east slope of the peak, the east prong of Derby Creek on the southwest slope, and Egeria Creek is on the northeast. It is about 15 miles west of Toponus, on the Moffat Railroad. Station can be easily reached from Burns post office, at the junction of Sunnyside Creek with Grand River, by following main road up creek through irrigated farms and across divide into Dry Gulch, thence by cow trails about 7 miles to station. Animals were ridden to within 100 yards of station. A nearer way would be to approach from the north by leaving the Yampa-Trappers Lake trail at a point near the 13-mile post from Yampa and follow up the slope of ridge that runs from station to the Bear River. From this side animals were ridden to a point under the peak about one-half mile northeast of station. A very large and well-built rock cairn was found which had a stick in top on which was carved what appeared to be land corner markings. Probably a point on or near the base line along the fortieth degree parallel.

Station mark: A bronze tablet in solid rock 13.6 feet from signal; true azimuth, 14° 14' 34''.

Signal: A large rock cairn 12 feet at base and 18 feet high.

[Latitude 40° 00' 54.006''. Longitude 107° 04' 57.114'']

To station—	Azimuth.	Back azimuth.	Distance.	
			<i>Log. meters.</i>	<i>Miles.</i>
Sopris.....	4 48 34.18	184 45 26.88	4.9240419	52.167
Quartzite.....	28 06 16.92	207 57 15.01	4.6313498	26.589
Turret.....	31 55 20	211 50 49	4.27855	11.80
Shingle.....	39 54 01	219 49 16	4.21549	10.21
North Mam.....	44 10 05.18	223 40 04.66	4.9859326	60.157
Limestone.....	48 17 16.92	228 04 10.94	4.59177	24.27
Plateau.....	80 23 40.09	260 14 22.67	4.3194980	12.967
Pagoda.....	123 08 26	302 58 46	4.40575	15.82
Pyramid.....	155 16 10	335 13 23	4.16592	9.10
Rabbit Ears.....	221 08 33.37	41 26 51.29	4.7847386	37.852
Whiteley.....	236 00 14.75	56 23 04.51	4.7815885	37.578
Gore.....	237 18 48	57 35 17	4.63453	26.78
Parkview.....	246 13 47.44	66 50 26.55	4.9441459	54.638
Elk.....	258 20 53.73	78 57 46.93	4.9192948	51.599
Lone Peak.....	285 00 29.14	105 25 32.78	4.7605316	35.800
Piney.....	293 19 34.36	113 42 07.55	4.7373526	33.939
Castile.....	321 09 01.27	141 18 45.04	4.5382436	21.458

**GORE, ROUTT COUNTY, COLO. (Not occupied.)**

A partly bald rocky peak of the Park Range, locally known as Gore Mountain, on divide between Bear River and Muddy Creek, at the head of Red Dirt Creek, which flows southeast into Muddy Creek. Station is in the NE.  $\frac{1}{4}$  T. 3 N., R. 83 E., and about 12 miles southwest of Muddy Pass.

Signal and station mark: Highest point of rock forming top of peak.

[Latitude  $40^{\circ} 13' 25.3''$ . Longitude  $106^{\circ} 39' 22.6''$ .]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	Log. meters.	Miles.
Flattop.....	57 35 17	237 18 48	4.63453	26.78
Rabbit Ears.....	189 48 38	9 50 26	4.36050	14.25
Whiteley.....	232 58 29	53 04 50	4.24118	10.83
Kremmling.....	309 45 40	129 57 26	4.52877	21.00

**HAGUE, LARIMER COUNTY, COLO.**

Station is on the highest of three points known as Fairchild, Hague, and Mummy. Hague is the central point and is northwest of Lawn Lake. To reach the station, take wagon road from Estes Peak to Horseshoe Flats, thence trail up Roaring River to Lawn Lake camp at this lake. Horses can be ridden to the pass between Fairchild and Hague.

Signal: A rock cairn 6 or 7 feet high.

Reference mark: A triangulation tablet set in solid rock 3.1 feet northwest of signal.

[Latitude  $40^{\circ} 29' 04.636''$ . Longitude  $105^{\circ} 38' 44.944''$ .]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	Log. meters.	Miles.
Arapahoe.....	0 22 50.79	180 22 41.58	4.7062917	31.597
Parkview.....	67 45 52.53	247 26 49.59	4.6528901	27.941
Richthofen.....	85 33 20.16	265 23 39.75	4.3248338	13.128
Lulu.....	98 10 36.8	278 02 35.5	4.24619	10.95
Clark.....	119 35 38.32	299 24 34.80	4.4408578	17.148
Rawah.....	126 39 57.7	306 27 53.4	4.51372	20.28
Shipman.....	136 26 54.49	316 10 02.43	4.7228605	32.825
North Bald.....	172 07 25.19	352 05 20.85	4.5142423	20.305
South Bald.....	171 58 57.26	351 57 00.85	4.4782220	18.688
Twin.....	206 55 04.95	27 09 54.59	4.8468583	43.673
Livermore.....	224 34 51.09	44 48 40.84	4.6293164	26.465
Whitepine.....	231 39 36.9	51 47 24.9	4.33404	13.41
Horsetooth.....	260 44 19.95	81 01 51.42	4.5865260	23.981
Hogback.....	305 44 00.01	126 01 26.43	4.6726149	29.239
Sugarloaf.....	339 03 16.99	159 12 06.85	4.7355109	33.796
Longs Peak.....	354 01 35.74	174 02 48.81	4.4085248	15.917

**HOGBACK, BOULDER COUNTY, COLO.**

Highest point of Hogback Ridge about 3 miles northwest of Hygiene, Colo. Locally known as Rabbit Mountain.

Station mark: Tablet in bed rock.

Reference mark: An arrow with crossbar cut in the rock and pointing to the station. True azimuth from station  $244^{\circ} 42'$ ; distance 2.22 feet.

Signal: A pine tree 74 feet northwest of tablet.

[Latitude 40° 14' 10.524" (U); 40° 14' 10.67" (T). Longitude 105° 11' 49.091" (U); 105° 11' 49.02" (T)].

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	Log. meters.	Miles.
Sugarloaf (U).....	39 06 17.39	218 57 44.40	4.4759726	18.592
Sugarloaf (T).....	39 05 48	218 57 15	4.475977	18.592
Arapahoe.....	59 03 27.14	238 45 56.46	4.6538537	28.003
Longs Peak.....	93 31 04.75	273 14 53.68	4.5513024	22.113
Lillie.....	100 54 27.60	280 42 09.77	4.4388088	17.067
Twin.....	102 10 13.71	281 57 49.40	4.4444957	17.292
Hague.....	126 01 26.43	305 44 00.01	4.6726149	29.239

NOTE.—(U)=values obtained by Urquhart from the northwest; (T)=values obtained by Tweedy from the east.

#### HOLY CROSS, EAGLE COUNTY, COLO.

In T. 7 S., R. 81 W., near the northwest corner of the township (approximate). On the highest point of the Holy Cross Mountain, about 7 miles (air line) southwest of Red Cliff on the Rio Grande Railroad and 10 miles southwest of Minturn. Roche Moutonnee (or Cross) Creek flows along the north base of the mountain. Station was reached from the town of Minturn by road and trail to the halfway cabin on Cross Creek and thence on foot to the summit, a climb of about 4,000 feet. Station is the same as that used by the Hayden Survey and also cut in later by the Coast and Geodetic Survey.

Signal and station mark: A rock cairn about 7 feet high.

Reference mark: An aluminum tablet distant 26 feet; true azimuth 312° 51'.

[Latitude 39° 28' 01.528". Longitude 106° 28' 51.911".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	Log. meters.	Miles.
Sopris.....	69 01 09.20	248 35 09.70	4.8002642	39.230
Red Table.....	77 03 00	256 53 01	4.36438	14.38
Castle.....	138 40 19.66	318 26 59.35	4.6554340	28.105
Piney.....	178 02 00.11	358 01 24.15	4.5917769	24.273
Lone Peak.....	185 14 49.31	365 16 42.09	4.6618523	28.523
Eagles Nest.....	198 10 30	18 15 32	4.55756	22.43
Powell.....	200 21 20	20 26 44	4.54103	21.60
Byers.....	225 55 26.33	46 15 54.32	4.8037768	39.548
Ptarmigan.....	237 24 39.54	57 42 03.84	4.6660692	28.802

#### HORSETOOTH, LARIMER COUNTY, COLO.

This station of the United States Coast and Geodetic Survey is identical with the United States Geological Survey station of the same name. It is 8 miles southwest of Fort Collins on a high, bare rocky point of the divide immediately east of Redstone Creek and 1½ miles north of the point where the Fort Collins-Estes Park road crosses the divide. Deep vertical clefts divide the peak into three nearly equal parts, which have the appearance of gigantic teeth when viewed from the eastward. The station is on the highest and most southern one of the three divisions of the peak and is marked by a United States Geological Survey triangulation tablet set in solid rock. A reference mark, Coast and Geodetic Survey standard disk, is 0.04 meter below the station and 4.74 meters distant in azimuth 171° 24'.

[Latitude 40° 32' 22.856" (K); 40° 32' 23.00" (C). Longitude 105° 11' 46.319" (K); 105° 11' 46.21 (C).]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	Log. meters.	Miles.
Hague.....	81 01 51.42	260 44 19.95	4.5865260	23.981
White Pine.....	109 00 45.0	288 51 00.5	4.34920	13.885
Livermore (K).....	161 31 38.54	341 27 54.35	4.4061788	15.832
Livermore (C).....	161 31 44.63	341 28 00.49	4.4061105	15.829
Twin.....	173 57 12.15	353 54 24.76	4.7543881	35.297

NOTE.—(K)=values obtained by Kendall from Coast and Geodetic Survey base, Twin-Horsetooth; (C)=values obtained by Chapman.

**KREMMLING, GRAND COUNTY, COLO.**

In T. 1 N., R. 80 W., near corner of secs. 21, 22, 27, and 28, on highest point of Junction Butte, a bald hill lying in the junction of the Grand and Blue rivers about 2 miles southeast of the town of Kremmling, on the Denver, Northwestern & Pacific Railroad.

Signal: Cairn 8 feet high.

Station mark: Bronze triangulation tablet in 6 by 8 by 24-inch stone over which is the cairn 8 feet high.

[Latitude 40° 01' 42.928". Longitude 106° 21' 07.092".]

To station—	Azimuth.	Back azimuth.	Distance.	
			<i>Log. meters.</i>	<i>Miles.</i>
Lone Peak.....	22 22 55.53	202 19 50.48	4.2548646	11.174
Piney.....	28 01 20.09	207 55 45.61	4.4213461	16.394
Castle.....	55 18 59.57	235 00 36.36	4.6970212	30.928
Gore.....	129 57 26	309 45 40	4.52877	20.99
Rabbit Ears.....	153 40 18.13	333 30 17.63	4.6938827	30.707
Whiteley.....	159 35 56.28	339 30 29.59	4.5352979	21.313
Buffalo.....	191 17 16	11 20 37	4.57584	23.40
Parkview.....	208 44 33.61	28 52 56.16	4.5825067	23.761
Elk.....	232 07 25.62	52 16 05.24	4.3835962	15.030
Byers.....	297 35 46.05	117 51 22.83	4.5924932	24.313
Ute.....	318 46 43.44	138 57 19.53	4.5539286	22.247
Powell.....	358 00 51	178 01 19	4.47404	18.50
Eagles Nest.....	359 35 51	179 35 56	4.44804	17.434

**LEON, MESA-DELTA COUNTY LINE, COLO.**

On summit of Leon Peak on the Delta-Mesa county line; a well-known peak at the head of Big Creek about 11 miles south and 6 miles east of Collbrun. Station is in T. 11 S., R. 94 W., near east edge of sec. 24, and can be easily reached by wagon road from Collbrun up Big Creek via Big Creek ranger station to sawmill, thence by ranger's trail to summit. Animals can be ridden to foot of peak about 0.25 mile northeast of summit. Good feed and water.

Signal: Center of cupola of Forest Service lookout house.

Station mark: A standard bronze tablet set in large boulder under center of cupola of Forest Service lookout house, 10 feet square. House built of wood and tin and painted white.

[Latitude 39° 04' 46.912" (K); 39° 04' 46.864" (U). Longitude 107° 50' 36.725" (K); 107° 50' 37.173" (U).]

To station—	Azimuth.	Back azimuth.	Distance.	
			<i>Log. meters.</i>	<i>Miles.</i>
North Mam=(Mams) (K).....	176 49 33.26	356 48 43.28	4.5334545	21.223
North Mam=(Mams) (U).....	176 49 08.25	356 48 18.18	4.5332803	21.214
Quartzite.....	214 17 12.33	34 37 13.83	4.9037615	49.787
Sunlight.....	226 04 35.46	46 22 13.11	4.7443496	34.491
Sopris.....	250 49 10.64	71 14 55.62	4.7930130	38.580
Chair.....	272 36 53	92 58 08	4.68750	30.26

NOTE.—(K)=values obtained by Kendall from the east; (U)=values obtained by Urquhart from the west.

**LILLIE, LARIMER COUNTY, COLO. (Not occupied.)**

On Lillies Peak, also known as Sheep Mountain, 8 miles north of Estes Park, Colo.

Station mark: A monument on the southeast peak.

[Latitude 40° 16' 57.470". Longitude 105° 30' 50.802".]

To station—	Azimuth.	Back azimuth.	Distance.	
			<i>Log. meters.</i>	<i>Miles.</i>
Bald.....	7 25 38.93	187 24 10.80	4.3987818	15.584
Longs Peak.....	70 22 44.43	250 18 50.87	3.9574063	5.633
Hogback.....	280 42 09.77	100 54 27.60	4.4388088	17.067
Sugarloaf.....	343 53 16.81	163 56 59.81	4.4705158	18.360

**LIMESTONE, GARFIELD COUNTY, COLO.**

In T. 3 S., R. 89 W., in the west-central part of the township (approximate). A point on White River Plateau, which is the divide between Grand and White rivers. Station is about 7 miles northwest of the old mining town of Carbonate and 18 miles southeast of Bufart, a post office on the White River. The old Ute trail from Deep Lake to Meeker crosses the divide about 1.25 miles south of the station, from which point a cow trail leads north along the ridge to station. Station is on the first summit north of the Ute trail and is about 2 miles south of the highest point of the ridge. Top of ridge is clear of both timber and brush.

Station mark: Bronze tablet in 6 by 6 inch sandstone set 15 inches in ground on solid rock distant 5.6 feet; true azimuth  $21^{\circ} 24'$  from signal.

Signal: Rock cairn 8 feet high.

[Latitude  $39^{\circ} 46' 49.5''$ . Longitude  $107^{\circ} 25' 22.6''$ .]

To station—	Azimuth.	Back azimuth.	Distance.	
			<i>Log. meters.</i>	<i>Miles.</i>
North Mam.....	41 09 59.90	220 53 04.77	4.76282	36.00
Rio Blanco.....	81 08 23.81	260 49 29.37	4.63110	26.574
Flattop.....	228 04 10.94	48 17 16.92	4.59177	24.273
Castle.....	270 48 03.61	91 10 49.95	4.70614	31.586
Quartzite.....	322 19 35.05	142 23 37.73	4.17049	9.201

**LITTLE BALD, LARIMER COUNTY, COLO.**

On the central of three small rises forming the summit of Little Bald Mountain, which is a spur of the Green Ridge and lies between the head waters of the North and South Forks of Lone Pine Creek. A wagon road leads from the Eaton Ditch camp on Sand Creek and passes about  $1\frac{1}{2}$  miles to west of the station and continues on to a junction with the "State Road" near the head of Deadman Creek.

Signal: A cairn 8 feet high with tree and flags in center.

Station mark: Bronze tablet in solid rock 1.5 feet northwest of signal.

[Latitude  $40^{\circ} 51' 31.29''$ . Longitude  $105^{\circ} 45' 23.46''$ .]

To station—	Azimuth.	Back azimuth.	Distance.	
			<i>Log. meters.</i>	<i>Miles.</i>
Clark.....	27 38 25.18	207 31 39.13	4.4987823	19.594
Shipman.....	83 03 53.90	262 51 18.62	4.4355270	16.939
Bull.....	135 14 52.38	315 11 50.18	3.9662174	5.749
Jelm.....	145 06 25.18	324 57 45.72	4.5094200	20.080
Gale.....	214 05 59.14	34 12 32.58	4.3980700	15.539
Dead Tree.....	223 06 46.30	43 11 42.20	4.1892380	9.607
Black.....	261 29 34.8	81 34 13.9	4.00428	6.28
North Bald.....	332 02 28.52	152 04 44.19	4.0162804	6.451

**LIVERMORE, LARIMER COUNTY, COLO.**

On the highest point of a rocky mountain, about 3 miles southwest of Livermore post office. It is between Lone Pine Creek and Main North Fork of Cache la Poudre River. It is about 4 miles north of Grey Rock, a bare peak with cliff on east, south, and west. Horses can be ridden to station. Easily reached via long ridge southwest from Livermore post office via Griffith's ranch.

Station mark: A bronze tablet cemented in solid rock.

Signal: Pole quadripod, with flags.

[Latitude 40° 45' 26.156" (K); 40° 45' 26.18" (C). Longitude 105° 17' 30.479" (K); 105° 17' 30.29" (C).]

To station—	Azimuth.	Back azimuth.	Distance.	
			<i>Log. meters.</i>	<i>Miles.</i>
White Pine.....	37 37 56.0	217 31 54.7	4.32922	13.26
Hague.....	44 48 40.84	224 34 51.09	4.6293164	26.465
South Bald.....	89 18 01.66	269 02 12.92	4.5326838	21.185
North Bald.....	93 36 55.83	273 20 58.94	4.5369750	21.396
Gale (K).....	141 56 32.72	321 44 50.36	4.6089706	25.253(K)
Gale (C).....	141 56 35.40	321 44 53.11	4.6089354	25.252(C)
Cap Rock.....	150 58 13.12	330 51 55.97	4.4436084	17.257
Twin.....	183 38 08.85	3 39 06.44	4.5104191	20.127
Horsetooth (K).....	341 27 54.35	161 31 38.54	4.4061788	15.832(K)
Horsetooth (C).....	341 28 00.49	161 31 44.63	4.4061105	15.829(C)

NOTE.—(K)=values obtained by Kendall from Coast and Geodetic Survey base; (C)=values obtained by Chapman.

#### LONE PEAK, SUMMIT-EAGLE COUNTIES, COLO.

Station is on highest point of Lone Peak or Sheep Mountain on divide between Sheephorn Creek and Blue River. It is about 20 miles a little west of south of Kremmling, a town on Moffat (Denver & Salt Lake) Railroad. Animals can be taken to the summit by going up Sheephorn Creek, on road about 4.5 miles above Mr. C. L. Gutzler's ranch, which is 2 miles above Sheephorn post office; thence northeast up ridge to summit of mountain. It is a timber-covered mountain, with bald peak on summit. Animals may also be ridden up the long slope from Blue River side, but this route will be through timber all the way up.

Signal: A cairn 8 feet high on highest peak.

Station mark: A triangulation tablet set in rock about 4.4 feet southeast of signal. True azimuth 286° 31'.

[Latitude 39° 52' 43.686". Longitude 106° 25' 55.254".]

To station—	Azimuth.	Back azimuth.	Distance.	
			<i>Log. meters.</i>	<i>Miles.</i>
Holy Cross.....	5 16 42.09	185 14 49.31	4.6618523	28.523
Piney.....	39 43 57.57	219 41 28.26	3.9380361	5.388
Flattop.....	105 25 32.78	285 00 29.14	4.7605316	35.800
Whiteley.....	173 58 08.01	353 55 47.44	4.6905859	30.474
Kremmling.....	202 19 50.48	382 22 55.53	4.2548646	11.174
Elk.....	219 26 20.20	39 38 04.32	4.6105488	25.345
Byers.....	272 00 50.78	92 19 30.83	4.6185878	25.819
Ute.....	288 38 46.29	108 52 25.99	4.5070077	19.969
Ptarmigan.....	300 47 29.44	121 03 05.22	4.6081278	25.205
Eagles Nest.....	328 16 08	148 19 18	4.12782	8.340

#### LONGS PEAK, BOULDER COUNTY, COLO.

On the highest point on Longs Peak, near the corner of Boulder, Grand, and Larimer counties. It can be ascended from Longs Peak draw. Animals can be ridden within about 2 miles' distance and 2,000 feet in elevation.

Reference mark: A copper tablet set in large boulder at the summit, 5 feet south of cairn.

Station mark: A rock cairn built on high boulder. (Not on Continental Divide.)

Latitude 40° 15' 18.613"; 40° 15' 20.8" (Hayden). Longitude 105° 36' 52.140"; 105° 36' 38.2" (Hayden).

To station—	Azimuth.	Back azimuth.	Distance.	
			<i>Log. meters.</i>	<i>Miles.</i>
Arapahoe.....	6 46 19.98	186 44 58.07	4.4073647	15.875
Parkview.....	100 50 10.91	280 29 57.71	4.6540764	28.017
Richthofen.....	135 09 15.54	314 58 23.44	4.5268160	20.901
Hague.....	174 02 48.81	354 01 35.74	4.4085248	15.917
Twin.....	245 50 43.10	65 54 30.24	3.9588714	5.652
Lillie.....	250 18 50.87	70 22 44.43	3.9574063	5.633
Hogback.....	273 14 53.68	93 31 04.75	4.5513024	22.113
Sugarloaf.....	326 29 22.32	146 36 58.20	4.4824674	18.872
Bald.....	346 15 49.34	166 18 14.26	4.3508207	13.937

**LOOKOUT, GARFIELD COUNTY, COLO.**

In T. 6 S., Rs. 88 and 89 W., near the corner of secs. 1, 6, 7, and 12 (approximate). On the highest point of Lookout Mountain, which lies between Grand River and Roaring Fork and is about 4 miles southeast of Thur junction, at Glenwood Springs, and is nearly south and opposite the mouth of Grizzly Canyon. The mountain has three peaks, the station being on the third from the west end. A good trail leads from Glenwood Springs to a pavilion (now burnt) on the west end of the mountain. From there a cow trail leads along the ridge to the station. Can also be reached by old wood road and trail from a ranch about 2 miles southeast of the station. Animals were ridden to the station. Feed good. No water.

Station mark: Bronze tab'et set in 6 by 8 by 30 inch stone 24 inches in ground.

Signal: Of five sides, constructed of dead poles, with a center pole set on tablet and carrying white and red flags.

[Latitude 39° 32' 30.51". Longitude 107° 16' 10.71".]

To station—	Azimuth.	Back azimuth.	Distance.	
			<i>Log. meters.</i>	<i>Miles.</i>
Sunlight.....	36 11 52.97	216 07 42.11	4.20353	9.93
North Mam.....	71 38 45.26	251 16 01.90	4.73308	33.607
Rio Blanco.....	109 50 26.23	289 25 42.48	4.77012	36.599
Castle.....	235 42 45.71	55 59 36.47	4.65917	28.348
Sopris.....	343 40 58.81	163 45 00.00	4.51088	20.148

**LULU, JACKSON-LARIMER COUNTIES, COLO. (Not occupied.)**

On Lulu Mountain, on line between Jackson and Larimer counties, about 3 miles northwest of La Poudre Pass, at the headwaters of the South Fork of Cache la Poudre River.

Signal and station mark: Rock cairn on highest point. Sighted from two points; position doubtful.

[Latitude 40° 30' 25.3". Longitude 105° 51' 06.0".]

To station—	Azimuth.	Back azimuth.	Distance.	
			<i>Log. meters.</i>	<i>Miles.</i>
Richthofen.....	40 57 54.9	220 56 15.5	3.74032	3.42
Hague.....	278 02 35.5	98 10 36.8	4.24619	10.95

**NORTH BALD, LARIMER COUNTY, COLO.**

On the most northern of the five peaks forming Bald Mountain, which is at the headwaters of Lone Pine and Seven-Mile creeks on the east and Roaring and Nun creeks on the west. The peak is timbered on all sides but has a small rocky summit which is bare. Station is on west end of bare space. A good wagon road and ranger's trail lead from Manhattan on the Livermore-Log Cabin-Home road passing a point about 1½ miles south of the peak. A ranger's trail also leads direct from the Lone Pine ranger station which is on the State road about 4 miles northeast of the station. This trail joins the road from Manhattan in the gap between North and South Bald.

Signal: A rock cairn 7 feet high with pine tree and flagpole in center.

Station mark: Bronze tablet in solid rock under center of cairn.

[Latitude 40° 46' 33.964". Longitude 105° 41' 55.894".]

To station—	Azimuth.			Back azimuth.		Distance.	
	°	'	"	°	'	Log. meters.	Miles.
Richthofen.....	25	57	54.36	205	50	4.5778913	23.509
Clark.....	46	07	54.99	225	58	4.4323100	16.814
Rawah.....	59	10	21.0	239	00	4.40169	15.67
Shipman.....	100	28	11.10	280	13	4.5114089	20.172
Jelm.....	146	49	44.44	326	38	4.6298236	26.496
Little Bald.....	152	04	44.19	332	02	4.0162804	6.451
Dead Tree.....	195	36	17.49	15	38	4.3270751	13.195
Gale.....	197	04	07.62	17	08	4.4948318	19.417
Black.....	205	36	54.2	25	39	4.07197	7.34
Cap Rock.....	223	06	13.75	43	15	4.4831240	18.901
Twin.....	230	06	34.16	50	23	4.6746935	29.379
Livermore.....	273	20	58.94	93	36	4.5369750	21.396
White Pine.....	311	31	47.3	131	41	4.45656	17.779
South Bald.....	353	42	55.49	173	43	3.4152968	1.617
Hague.....	352	05	20.85	172	07	4.5142423	20.305

## NORTH MAM, GARFIELD COUNTY, COLO.

On summit of the North Mam Peak, the highest point of the Battlement Mesa, about 10 miles south and 5 miles west of Rifle, from which point it can be easily reached by wagon road up Beaver Creek to Fondett's ranch and thence by trail till peak first shows on the right. The best way from this point is to turn nearly north and approach the peak from the northeast side. Animals can be ridden to foot of peak on northeast side about 0.25 mile from summit.

Signal: A cairn 6 feet high with 10-foot pine pole in center.

Station mark: A bronze tablet set in stone and placed in crevice of rock over which which was built a cairn 6 feet high.

[Latitude 39° 23' 12.25" (C. & G. S.); 39° 23' 12.758" (K); 39° 23' 11.71" (U-N); 39° 23' 12.259" (U-W). Longitude 107° 51' 56.34" (C. & G. S.); 107° 51' 55.749" (K); 107° 51' 55.98" (U-N); 107° 51' 56.336" (U-W).]

To station—	Azimuth.			Back azimuth.		Distance.	
	°	'	"	°	'	Log. meters.	Miles.
Rio Blanco (K).....	173	20	39.76	353	18	4.5710099	23.140
Rio Blanco (U-N).....	173	20	40.76	353	18	4.5710313	23.141
Sleepy Cat (K).....	199	06	49.57	19	19	4.9438947	54.607
Sleepy Cat (U-N).....	199	06	35.44	19	19	4.9439031	54.608
Plateau.....	214	54	05.42	35	14	4.9080739	50.283
Limestone.....	220	53	04.77	41	09	4.76282	36.00
Flatop.....	223	40	04.66	44	10	4.9859326	60.157
Quartzite.....	235	40	13.44	56	01	4.7553972	35.379
Lookout.....	251	16	01.90	71	38	4.73308	33.607
Sunlight.....	263	58	55.09	84	17	4.6243113	26.161
Divide.....	280	18	53.44	100	32	4.49312	19.341
Sopris.....	282	44	27.82	103	11	4.7928455	38.565
Chair.....	305	41	48	125	03	4.79404	38.671
Leon (K).....	356	48	43.28	176	49	4.5334545	21.223
Leon (U-W).....	356	48	18.18	176	49	4.5332803	21.214

NOTE.—(C. & G. S.)=values of Coast and Geodetic Survey cut in from 2 points; (K)=value of Kendall from east; (U-N)=Urquhart from north; (U-W)=Urquhart from west.

## PAGODA, RIO BLANCO COUNTY, COLO. (Not occupied.)

Station is the highest point of Pagoda Peak, a high sharp peak about 11 miles east of Sleepy Cat Mountain.

[Latitude 40° 08' 24.3" (K); 40° 08' 23.49" (U). Longitude 107° 19' 57.5" (K); 107° 19' 57.92" (U).]

To station—	Azimuth.			Back azimuth.		Distance.	
	°	'	"	°	'	Log. meters.	Miles.
Sleepy Cat (K).....	87	50	04	267	42	4.22138	10.34
Sleepy Cat (U).....	87	49	50.12	267	42	4.2214469	10.347
Flatop.....	302	58	46	123	08	4.40575	15.82
Plateau.....	357	24	46	177	25	4.24095	10.82

NOTE.—(K)=values obtained by Kendall from the south; (U)=values obtained by Urquhart from the north.



**PARKVIEW, GRAND-JACKSON COUNTIES, COLO.**

On the highest point of Parkview Mountain, on Continental Divide, and on line between Jackson and Grand counties. It is at the source of Willow Creek and East Troublesome Creek flowing south and Willow Creek flowing north. There is a road from Granby to North Park which crosses the divide 4 or 5 miles east of signal. Leave this road at Forestry station and go up trail along telephone line to summit of mountain. Animals can be ridden all the way up.

Signal and station mark: A rock cabin 9 by 8 by 7 feet high, erected by the Forestry Service.

Reference mark: A United States Geological Survey triangulation tablet set in southeast corner of rock cabin.

[Latitude 40° 19' 49.228". Longitude 106° 08' 08.145".]

To station—	Azimuth.	Back azimuth.	Distance.	
			<i>Log. meters.</i>	<i>Miles.</i>
Kremmling.....	28 52 56.16	208 44 33.61	4.5825067	23.761
Castle.....	43 56 33.10	223 29 45.17	4.9329814	53.252
Flattop.....	66 50 26.55	246 13 47.44	4.9441459	54.638
Rabbit Ears.....	105 05 33.43	284 47 06.45	4.6203235	25.922
Buffalo.....	107 18 15	287 13 13	4.06171	7.162
Richthofen.....	232 53 07.62	53 02 30.90	4.4095087	15.954
Hague.....	247 26 49.59	67 45 52.53	4.6528901	27.941
Longs Peak.....	280 29 57.71	100 50 10.91	4.6540764	28.017
Arapahoe.....	309 01 04.89	129 19 53.27	4.7273518	33.167
Byers.....	342 38 11.23	162 45 29.24	4.7336831	33.654
Elk.....	357 58 50.07	177 59 08.05	4.2716203	11.614

**PINEY, EAGLE COUNTY, COLO.**

Station is on the southern of two peaks on ridge between Sheephorn and Piney creeks. A forest-reserve trail from Mr. Ross's ranch on Sheephorn Creek about 5 miles above Sheephorn post office crosses the ridge about 1 mile north of signal. Animals can be ridden to summit of mountain.

Signal: Rock cairn 7 feet high.

Station mark: A United States Geological Survey triangulation tablet set in solid rock 3.3 feet southeast of signal; true azimuth 309° 47'.

[Latitude 39° 49' 07.425". Longitude 106° 29' 48.277".]

To station—	Azimuth.	Back azimuth.	Distance.	
			<i>Log. meters.</i>	<i>Miles.</i>
Red Table.....	25 36 54	205 27 26	4.69063	30.48
Castle.....	79 54 10.57	259 41 23.38	4.4620898	13.005
Flattop.....	113 42 07.55	293 19 34.36	4.7373526	33.939
Rabbit Ears.....	171 53 13.48	351 48 50.17	4.8341032	42.409
Whiteley.....	180 21 38.05	00 21 47.57	4.7438366	34.450
Kremmling.....	207 55 45.61	28 01 20.09	4.4213461	16.394
Lone Peak.....	219 41 28.26	39 43 57.57	3.9380361	5.388
Byers.....	263 38 43.17	83 59 51.80	4.6753682	29.425
Eagles Nest.....	290 35 23	110 41 02	4.12912	8.36
Powell.....	295 38 49	115 44 50	4.17340	9.26
Holy Cross.....	358 01 24.15	178 02 00.11	4.5917769	24.273

**PLATEAU (OLD MARVINE), RIO BLANCO-GARFIELD COUNTIES, COLO.**

In T. 1 S., R. 88 W., sec. 30 (approximate). On the highest and most northern of two peaks at the head of Marvine Creek to northwest and Doe Creek to the south. It is about 5 miles northeast of Marvine Lake and 6 miles west of Trappers Lake, both well-known fishing resorts. The peak is known as Plateau Peak and is about 3 miles north of Mount Marvine. Both peaks rise abruptly from the plateau forming the divide between the north and south forks of the White River and tributary of the

Grand River, which plateau can be reached by trails from Marvine Lake or Hanes ranch on the North Fork of White River. Wagon roads lead to Meeker from both places. It can also be reached by trails leading off from the Glenwood Springs-Trappers Lake trail. Station is near the Garfield-Rio Blanco county line. This is the same point cut in by Charles F. Urquhart under the name of Marvine.

Station mark: Bronze tablet in stone over which was erected a rock cairn 8 feet high. Old cairn was torn down and tablet set under center.

Signal: Rock cairn 8 feet high.

[Latitude 39° 59' 00.202" (K); 39° 58' 59.45" (U). Longitude 107° 19' 24.327" (K); 107° 19' 24.92" (U).]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	Log. meters.	Miles.
North Mam.....	35 14 51.55	214 54 05.42	4.9080739	50.283
Sleepy Cat (K).....	133 54 37.55	313 46 43.97	4.3834892	15.026
Sleepy Cat (U).....	133 54 23.19	313 46 29.63	4.3834442	15.024
Pagoda.....	177 25 07	357 24 46	4.24095	10.82
Pyramid.....	220 33 08	40 39 39	4.34538	13.76
Flattop.....	260 14 22.67	80 23 40.09	4.3194980	12.967
Shingle.....	312 05 23	132 09 55	4.13237	8.43
Turret.....	319 58 13	140 02 59	4.21728	10.25
Quartzite.....	359 08 46.37	179 09 00.09	4.5348564	21.292

NOTE.—(K)=values obtained by Kendall from the south; (U)=values obtained by Urquhart from the north.

#### POWELL MOUNTAIN, EAGLE-SUMMIT COUNTIES, COLO. (Not occupied.)

Highest point of Mount Powell, a well-known peak of the Park Range (or Gores Mountains) on divide between Blue River on the east and Piney River on the west. It is about 20 miles south of the town of Kremmling on the Denver & Salt Lake (Moffat) Railroad. Station is probably on line between Eagle and Summit counties and is in T. 3 S., R. 80 W., in south part of the township. It is a station of the Hayden Survey.

Station mark and signal: Highest part of mountain.

[Latitude 39° 45' 37.7". Longitude 106° 20' 23.8'.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	Log. meters.	Miles.
Holy Cross.....	20 26 44	200 21 20	4.54103	21.60
Piney.....	115 44 50	295 38 49	4.17340	9.26
Kremmling.....	178 01 19	358 00 51	4.47404	18.50
Byers.....	250 55 02	71 10 08	4.55147	22.12
Ute.....	262 50 22	83 00 47	4.35672	14.13

#### PTARMIGAN, GRAND-SUMMIT COUNTIES, COLO.

Station is on the highest point of Ptarmigan Peak, a bald mountain at the source of West Fork of Williams River and on the divide between Blue River and Williams River. It is about 7 miles a little east of north of Dillon. It was ascended from Mrs. Sundrager's ranch on Blue River 5 miles below Dillon, but I think animals can be ridden to it by going up any ridge from Blue River.

Signal: A rock cairn 8 feet high.

Station mark: A  $\frac{3}{4}$ -inch hole drilled in rock about 4 inches deep, 2.7 feet southwest of signal; true azimuth 18° 46'.

[Latitude 39° 41' 27.844". Longitude 106° 01' 32.882".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	<i>Log. meters.</i>	<i>Miles.</i>
Holy Cross.....	57 42 03.84	237 24 39.54	4.6660692	28.802
Eagles Nest.....	108 51 34	288 39 09	4.46700	18.21
Lone Peak.....	121 03 05.22	300 47 29.44	4.6081278	25.205
Ute.....	157 31 44.82	337 29 48.03	4.0558764	7.067
Elk.....	170 33 41.57	350 29 45.75	4.7244747	32.948
Byers.....	199 21 01.52	19 24 03.73	4.3102188	12.693
Arapahoe.....	220 41 26.94	40 55 54.52	4.6922537	30.592

**PYRAMID, RIO BLANCO COUNTY, COLO. (Not occupied.)**

Highest point of Pyramid Peak, a well-known peak at the north end of the White River Plateau and about 15 miles nearly west of Yampa.

Signal and station mark: Highest point of peak.

Sighted from two stations, position doubtful.

[Latitude 40° 08' 05.4". Longitude 107° 09' 16.0".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	<i>Log. meters.</i>	<i>Miles.</i>
Plateau.....	40 39 39	220 33 08	4.34538	13.76
Flattop.....	335 13 23	155 16 10	4.16592	9.10

**QUARTZITE, GARFIELD COUNTY, COLO.**

In T. 4 S., R. 88 W., near the west quarter corner of section 30 (approximate). On the highest point of Quartzite Ridge a well-known ridge which forms the divide between Grizzly Canon and Canon Creek. Station is on the highest point of a bare portion of the ridge at the head of No Name Creek and overlooks the brooks of that creek to the south and Grizzly Canon to the north and east. It is about 12 miles north of Glenwood Springs and 2 miles north of the Bennett or peaked-roof sawmill. The old road from Glenwood Springs via Bennetts Mill and the old town of Carbonate to Deep Lake crosses the ridge about 1 mile northwest of the station, from which point it can be easily reached with animals. A thick clump of pine trees on the hill was cut, leaving a lone tree for signal. The tree is near the line of the 11th Guide Meridian west and bears land markings which could not be deciphered.

Station mark: Bronze tablet in 6 by 8 by 30 inch sandstone set 24 inches in the ground, 6.3 feet, true azimuth 280° 48' from signal.

Signal: Lone pine tree with flag in top.

[Latitude 39° 40' 29.305". Longitude 107° 19' 02.903'.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	<i>Log. meters.</i>	<i>Miles.</i>
Sunlight.....	10 52 45.61	190 50 24.07	4.4497888	17.504
Divide.....	23 51 35.61	203 44 14.13	4.61372	25.531
Leon.....	34 37 13.83	214 17 42.33	4.9037615	49.787
North Mam.....	56 01 09.15	235 40 13.44	4.7553972	35.379
Limestone.....	142 23 37.73	322 19 35.05	4.17049	9.201
Plateau.....	179 09 00.09	359 08 46.37	4.5348564	21.292
Turret.....	205 05 30	25 10 03	4.37769	14.827
Flattop.....	207 57 15.01	28 06 16.92	4.6313498	26.589
Castle.....	255 18 17.73	75 36 59.95	4.6355323	26.846
Red Table.....	299 36 49	119 58 46	4.75521	35.364
Sopris.....	343 54 13.74	164 00 04.75	4.6789794	29.671

**RABBIT EARS, JACKSON COUNTY, COLO.**

In T. 6 N., R. 82 W., near the corner of secs. 28, 29, 32, and 33 (approximate). A point on the Park Range about 2 miles east of the Continental Divide and about 5 miles north of the west corner of Grand and Jackson counties. Station is on the western and higher of two large rock columns locally known as "Rabbit Ears." The peak is just east of the Continental Divide between the headwaters of Big Grizzly Creek on the south and Colorado Creek on the north. The Kremmling-Steamboat Springs road crosses the divide at a point about 2.5 miles southwest of the station, from which point it can be easily approached. The rock is precipitous on all sides and the top has to be gained from the south side by ladders.

Station mark: Bronze tablet set in solid rock over which was erected a rock cairn about 5 feet high and around this is a pole quadripod with flags at top and brush nailed to quadripod.

Signal: Rock cairn and quadripod with flags and brush.

[Latitude 40° 25' 37.896". Longitude 106° 36' 36.868".]

To station—	Azimuth.	Back azimuth.	Distance.	
			<i>Log. meters.</i>	<i>Miles.</i>
Gore.....	9 50 26	189 48 38	4.36050	14.25
Castle.....	14 30 25.30	194 21 56.40	4.8754314	46.643
Flattop.....	41 26 51.29	221 08 33.37	4.7847386	37.852
Buffalo.....	283 56 28	104 09 53	4.48005	18.77
Parkview.....	284 47 06.45	105 05 33.43	4.6203235	25.922
Elk.....	305 30 27.72	125 49 10.79	4.7031490	31.369
Whiteley.....	320 28 15.12	140 32 49.36	4.1960495	9.759
Kremmling.....	333 30 17.63	153 40 18.13	4.6938827	30.707
Piney.....	351 48 50.17	171 53 13.48	4.8341032	42.409

**RAWAH, LARIMER-JACKSON COUNTIES, COLO. (Not occupied.)**

Round bare peak on the Medicine Bow Range at the head of Rawah Creek on the northeast and a prong of the East Fork of Platte River on the west.

Station mark and signal: What appears to be a low rock cairn on highest part of peak.

[Latitude 40° 39' 34.0". Longitude 105° 57' 17.7".]

To station—	Azimuth.	Back azimuth.	Distance.	
			<i>Log. meters.</i>	<i>Miles.</i>
Shipman.....	151 12 48.4	331 08 00.8	4.33125	13.32
North Bald.....	239 00 19.7	59 10 21.0	4.40169	15.67
Hague.....	306 27 53.4	126 39 57.7	4.51372	20.28
Richthofen.....	346 11 06.5	166 13 29.8	4.33722	13.51

**RED, LARIMER COUNTY, COLO. (Not occupied.)**

On the southwest or highest part of Red Mountain about 4 miles southeast of the Boswell ranch on the Laramie River and 3 miles south of the Lindsay ranch on the Tie Siding-North Park public road. Station is near the Colorado-Wyoming State line.

Signal and station mark: A clump of 4 pine trees, with flagpole in center. The end of mountain was cleared leaving only the signal trees standing.

[Latitude 40° 59' 41.08". Longitude 105° 56' 03.74".]

To station—	Azimuth.	Back azimuth.	Distance.	
			<i>Log. meters.</i>	<i>Miles.</i>
Shipman.....	33 10 50.13	213 05 13.13	4.3430520	13.690
Jelm.....	162 41 40.76	342 40 01.03	4.0760940	7.404
Gale.....	258 58 40.34	79 12 14.59	4.4701158	18.343
Dead Tree.....	278 25 54.15	98 37 50.30	4.4119216	16.042
Bull.....	315 13 43.27	135 17 40.50	4.0800898	7.472

**RED TABLE (MOUNT THOMAS), EAGLE COUNTY, COLO. (Not occupied.)**

On Red Table Mountain in T. 7 S., R. 83 W., near the southwest corner of township, near the head of Freeman Creek on the south, and a prong of Brush Creek on the north. On round bare knob.

Signal and station mark: Rock cairn.

[Latitude 39° 25' 12.3". Longitude 106° 44' 34.6".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	Log. meters.	Miles.
Sopris.....	64 15 56	243 59 55	4.60588	25.07
Quartzite.....	119 58 46	299 36 49	4.75521	35.36
Castle.....	169 14 38	349 11 19	4.60021	24.75
Piney.....	205 27 26	25 36 54	4.69063	30.48
Holy Cross.....	256 53 01	77 03 00	4.36438	14.38

**RICHTHOFEN, LARIMER-JACKSON-GRAND COUNTIES, COLO.**

On the summit of Mount Richthofen at the headwaters of Grand, Cache, La Poudre, and Michigan rivers. Station is on the southwest end of the summit and can be best reached by going up Saw Mill Creek from the Grand River Ditch camp, which can be reached from Poudre Pass by following up ditch or from Cameron Pass by ditch to old road, thence along the road via Lula Pass. Animals were ridden to a point just under the peak on the east side.

Signal: Rock cairn 7 feet high.

Station mark: Bronze tablet in stone set 2 feet in loose rock under the center of the cairn.

[Latitude 40° 28' 10.597". Longitude 105° 53' 39.052".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	Log. meters.	Miles.
Parkview.....	53 02 30.90	232 53 07.62	4.4095087	15.954
Walden Standpipe.....	131 46 51	311 31 53	4.63765	26.97
Shipman.....	158 49 33.89	338 42 24.43	4.6311193	26.575
Rawah.....	166 13 29.75	346 11 06.46	4.33722	13.51
Clark.....	168 57 43.19	348 56 20.91	4.1915898	9.659
North Bald.....	205 50 16.55	25 57 54.36	4.5778913	23.509
South Bald.....	208 04 09.12	28 11 54.72	4.5521945	22.159
Luld.....	220 56 15.51	40 57 54.88	3.74032	3.42
Hague.....	265 23 39.75	85 33 20.16	4.3248337	13.128
Longs Peak.....	314 58 23.44	135 09 15.54	4.5268160	20.901
Arapahoe.....	337 00 03.85	157 09 32.33	4.7275240	33.180

**RIO BLANCO, GARFIELD COUNTY, COLO.**

Station is on the highest point of peak about 3.5 miles southeast of Rio Blanco stage station and post office. The post office is on Meeker and Rifle road, 24 miles from Meeker and 20 miles from Rifle. Animals can be ridden to summit of peak. Signal is a rock cairn 7 feet high. Station mark a United States Geological Survey triangulation tablet under center of cairn.

[Latitude 39° 43' 12.104" (K); 39° 43' 11.12" (U). Longitude 107° 54' 56.965" (K); 107° 54' 57.19" (U)].

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	Log. meters.	Miles.
Limestone.....	260 49 29.37	81 08 23.81	4.63110	26.574
Lookout.....	289 25 42.48	109 50 26.23	4.77012	36.599
Sunlight.....	305 09 43.43	125 30 14.09	4.7521907	35.119
Sopris.....	307 58 18.52	128 26 59.59	4.9154230	51.141
North Mam (K).....	353 18 44.36	173 20 39.76	4.5710099	23.140
North Mam (U).....	353 18 45.36	173 20 40.76	4.5710313	23.141

NOTE.—(K)=values obtained by Kendall from the east; (U)=values obtained by Urquhart from the north.

**SHINGLE, GARFIELD COUNTY, COLO. (Not occupied.)**

On Shingle Peak on the east edge of White River Plateau about 10 miles southeast of Marvins Lake and about 7 miles south of Trappers Lake.

Signal and station mark: Rock cairn on highest point of peak.

[Latitude 39° 54' 05.2." Longitude 107° 12' 20.6".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	<i>Log. meters.</i>	<i>Miles.</i>
Plateau.....	132 09 55	312 05 23	4.13237	8.43
Flattop.....	219 49 16	39 54 01	4.21549	10.21
Castle.....	293 51 58	114 06 05	4.54688	21.89

**SHIPMAN, LARIMER-JACKSON COUNTIES, COLO.**

On the Medicine Bow Range about 1.5 miles northwest of the Ute Pass where the State road to Walden crosses the Medicine Bow Range 15 miles east of Walden. Station is on the first high point northwest of the Ute Pass and is probably on the line between Larimer and Jackson counties. It can be easily reached by following ranger's trail from Ute Pass to Village Belle mine. Wycla Trail leaves the State road at firebox 46 in the pass and runs within a few feet of the station.

Signal: A six-sided pole signal carrying white and black flags with white on sides and pine bushes at apex.

Station mark: Standard bench mark tablet set in solid rock, centered under signal.

[Latitude 40° 49' 42.976". Longitude 106° 04' 38.312".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	<i>Log. meters.</i>	<i>Miles.</i>
Walden Standpipe.....	56 58 21	236 50 31	4.30454	12.53
Jelm.....	195 50 32.61	15 54 30.39	4.4914620	19.267
Red.....	213 05 13.13	33 10 50.13	4.3430520	13.690
Bull.....	244 09 04.88	64 18 38.45	4.3577621	14.162
Little Bald.....	262 51 18.62	83 03 53.90	4.4355270	16.939
North Bald.....	280 13 20.83	100 28 11.10	4.5114089	20.172
South Bald.....	284 30 44.73	104 45 42.73	4.5225470	20.697
Hague.....	316 10 02.43	136 26 54.49	4.7228605	32.825
Rawah.....	331 08 00.8	151 12 48.4	4.33125	13.43
Clark.....	333 01 12.02	153 06 59.48	4.4409279	17.151
Richthofen.....	338 42 24.43	158 49 33.89	4.6311193	26.575

**SLEEPY CAT, RIO BLANCO COUNTY, COLO.**

Station is on a rocky peak about 0.5 or 0.8 mile northeast of Sleepy Cat Peak, a well-known mountain about 25 miles north-northeast of Meeker. The latter mountain is higher and more prominent than station, but can not be used on account of dense growth of timber at summit. There is a road from Meeker and from Thornburg to the Riley-Merritt sawmill at foot of peak. The mill is not being operated at present, but there is a United States forestry station there.

Signal: A rock cairn 6 feet high with spruce tree in center.

Station mark: A triangulation tablet set in center of cairn. Animals can be taken very near the point.

[Latitude 40° 08' 03.35" (K); 40° 08' 02.46" (U). Longitude 107° 31' 40.24" (K); 107° 31' 40.75" (U).]

To station—	Azimuth.			Back azimuth.		Distance.	
	°	'	"	°	'	Log. meters.	Miles.
Mams Peak (U).....	19	19	32.69	199	06	4.9439031	54.608
Petrolite (U).....	57	24	17.44	237	05	4.6866763	30.201
Cathedral (U).....	63	01	09.57	242	21	4.9924938	61.072
Colorow (U).....	95	43	03.65	275	17	4.7455392	34.585
Devils Hole (U).....	99	50	48.40	279	36	4.5069846	19.968
Juniper (U).....	129	32	58.47	309	13	4.7411607	34.238
North Mam (K).....	19	19	46.95	199	06	4.9438947	54.607
North Mam (U).....	19	19	32.69	199	06	4.9439031	54.608
Pagoda (K).....	267	42	31	87	50	4.22138	10.34
Pagoda (U).....	267	42	17.06	87	49	4.2214469	10.347
Plateau (K).....	313	46	43.97	133	54	4.3834892	15.026
Plateau (U).....	313	46	29.63	133	54	4.3834442	15.024

NOTE.—(K)=values obtained by Kendall from the south; (U)=values obtained by Urquhart from the north.

**SOPRIS, PITKIN COUNTY, COLO.**

In T. 9 S., R. 88 W., near the corner of secs. 23, 24, 25, and 26 (approximate). On the highest point of the southeastern peak of Sopris Mountain, a well-known mountain about 15 miles south of Carbondale on the Denver & Rio Grande and Colorado Midland railroads, from which place it can be easily reached by road up Antler (or Province) Creek to a sawmill near its head. A good trail leads from the sawmill to the top of the divide 1 mile south of the station.

Station mark: Bronze tablet in 8 by 8 by 24 inch stone set in loose rock, distant 6.2 feet; true azimuth 65° 18' from cairn.

Signal: A large rock cairn 8 feet high replacing the one used by the Hayden Survey and E. M. Douglas in former work.

[Latitude 39° 15' 41.280" (K); 39° 15' 36.2" (D). Longitude 107° 09' 50.705" (K); 107° 09' 57.4" (D).]

To station—	Azimuth.			Back azimuth.		Distance.	
	°	'	"	°	'	Log. meters.	Miles.
Chair (K).....	24	15	54	204	11	4.39324	15.37
Chair (D).....	24	15	54	204	11	4.393718	15.384
Leon.....	71	14	55.62	250	49	4.7930130	38.580
North Mam.....	103	11	07.96	282	44	4.7928455	38.565
Rio Blanco.....	128	26	59.59	307	58	4.9154230	51.141
Sunlight.....	134	33	58.77	314	25	4.4150042	16.157
Lookout.....	163	45	00.00	343	40	4.51088	20.148
Quartzite.....	164	00	04.75	343	54	4.6789794	29.671
Flattop.....	184	45	26.88	4	48	4.9240419	52.167
Castle.....	206	46	14.44	26	59	4.8035053	59.524
Red Table.....	243	59	55	64	15	4.60588	25.074
Holy Cross.....	248	35	09.70	69	01	4.8002642	39.230

NOTE.—(K)=value obtained by Kendall from the north; (D)=value obtained by Douglas from the south. (See Bull. 122, p. 289.)

**SOUTH BALD, LARIMER COUNTY, COLO.**

On the central and highest of five peaks forming Bald Mountain, which is at the headwaters of Lone Pine and Seven-Mile creeks on the east and Roaring and Nun creeks on the west. Peak is bare on all sides and station is on the summit, which runs up very sharp. A good wagon road and rangers' trail leads from Manhattan on the Livermore-Log Cabin and Home road to a point just north of the peak. A ranger's trail also leads direct from the Lone Pine ranger station on the State road, which is about 5 miles northeast of the station.

Signal: A rock cairn 6 feet high with small flagpole in the center.

Station mark: A bronze tablet in stone set 2 feet in the ground 5.4 feet southeast of the signal; true azimuth 324° 58'.

[Latitude 40° 45' 10.12". Longitude 105° 41' 43.76".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	Log. meters.	Miles.
Richtshofen.....	28 11 54.72	208 04 09.12	4.5521945	22.159
Shipman.....	104 45 42.73	284 30 44.73	4.5225470	20.697
North Bald.....	173 43 03.43	353 42 55.49	3.4152968	1.617
Gale.....	195 18 54.70	15 23 03.88	4.5270298	20.911
Livermore.....	269 02 12.92	89 18 01.66	4.5326838	21.185
Hague.....	351 57 00.85	171 58 57.26	4.4782220	18.688

• SUGAR LOAF, BOULDER COUNTY, COLO.

High conical timbered mountain (bare rock on summit) known as Sugar Loaf Mountain, on south side of Four Mile Creek between Wall Street and Copper Rock. Reached by old railroad grade (now wagon road) from Sunset.

Station mark: Aluminum tablet under rock cairn.

[Latitude 40° 01' 36.974" (U) final; 40° 01' 36.99" (T). Longitude 105° 25' 04.992" (U); 105° 25' 04.78" (T).]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	Log. meters.	Miles.
Arapahoe.....	89 59 27.02	269 50 30.50	4.2962388	12.291
Bald.....	107 17 48.57	287 12 38.19	4.0782957	7.441
Longs Peak.....	146 36 58.20	326 29 22.32	4.4824074	18.872
Hague.....	159 12 06.85	339 03 16.99	4.7355109	33.796
Twin.....	163 52 24.33	343 48 34.90	4.4807944	18.799
Lillie.....	163 56 59.81	343 53 16.81	4.4705158	18.360
Hogback (U).....	218 57 44.40	39 06 17.39	4.4759726	18.592
Hogback (T).....	218 57 15	39 05 48	4.475977	18.592

NOTE.—(U)=values obtained by Urquhart from the northwest; (T)=values obtained by Tweedy from the east.

SUNLIGHT, GARFIELD COUNTY, COLO.

In T. 7 S., R. 89 W., in the southwest corner of the township (approximate). Station is on the highest point of ridge forming the divide between waters of Roaring Fork River and West Divide Creek. Four Mile Creek, a tributary of Roaring Fork, flows along the south base of the ridge, and Three Mile and Garfield creeks head against the ridge and flow north and northwest, respectively. Station can be easily reached from Glenwood Springs by wagon road up Roaring Fork and Four Mile Creek via the Sunlight Mines to Likes ranch and sawmill, thence by trail north up Likes Branch to the divide, thence along or near the top of the ridge east to station. It is about 3 miles by trail north of Likes ranch. Timber was cut in order to afford a good view in all directions. A lone pine tree was left on the highest point for signal.

Station mark: Bronze tablet set in sandstone boulder distant 6 feet; true azimuth 233° 57' from signal.

Signal: Lone pine tree about 15 feet northwest of highest point with flag in top and braced by four poles carrying white targets.

[Latitude 39° 25' 32.235". Longitude 107° 22' 45.192".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	Log. meters.	Miles.
Leon.....	46 22 13.11	226 04 35.46	4.7443596	34.491
Divide.....	48 42 19.07	228 37 19.73	4.17722	9.345
North Mam.....	84 17 26.37	263 58 55.09	4.6243113	26.161
Rio Blanco.....	125 30 14.09	305 09 43.43	4.7521907	35.119
Quartzite.....	190 50 24.07	10 52 45.61	4.4497888	17.504
Lookout.....	216 07 42.11	36 11 52.97	4.20353	9.93
Sopris.....	314 25 47.71	134 33 58.77	4.4150042	16.157
Chair.....	348 16 43	168 20 26	4.61954	25.88



**TURRET, GARFIELD COUNTY, COLO. (Not occupied.)**

A small turret-shaped peak on the White River Plateau near the head of the South Fork of White River and about 12 miles southeast of Marvine Lake.

Signal and station mark: Center of peak.

[Latitude 39° 52' 10.5". Longitude 107° 11' 58.2".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	Log. meters.	Miles.
Quartzite.....	25 10 03	205 05 30	4.37769	14.83
Plateau.....	140 02 59	319 58 13	4.21728	10.25
Flattop.....	211 50 49	31 55 20	4.27855	11.80

**TWIN, LARIMER COUNTY, COLO.**

This station is on the northwestern of two prominent peaks locally known as the Twin Sisters but called Lilly Mountain in United States Geological Survey notes. There is a small mountain about 3 miles north-northwest of this point and half a mile north of Lilly Lake, locally known as Lilly Mountain. There is still another mountain about 5 miles northwest of the Twin Sisters, locally known as Sharp Mountain, consequently it would be confusing to call the station by any other name than Twin Sisters. The station is less than 3 miles in air line from Longs Peak. There is a trail from Longs Peak to the summit but horses can not be ridden more than two-thirds of the way.

Signal and station mark: A rock cairn 6.5 feet high.

Reference mark: A United States Geological Survey triangulation tablet set in solid rock 3 feet northeast of cairn.

[Latitude 40° 17' 19.147". Longitude 105° 31' 00.758".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	Log. meters.	Miles.
Bald.....	6 42 45.28	186 41 23.57	4.4096472	15.959
Longs Peak.....	65 54 30.24	245 50 43.10	3.9588714	5.652
Hogback.....	281 57 49.40	102 10 13.71	4.4444957	17.292
Sugarloaf.....	343 48 34.90	163 52 24.33	4.4807944	18.799

**UTE, GRAND-SUMMIT COUNTIES, COLO.**

Station is on the higher and southeastern of two small peaks on summit of a ridge lying between Blue River and Williams River and locally known as the Blue Ridge. It is about 3 miles south of the Big Ute pass, through which there is a very fair trail from Blue River to Williams River. Animals can be ridden along summit from pass to station, though there is no well-defined trail. The above-mentioned trail crosses Blue River at Mr. Andrew Linstrom's ranch, about 16 miles northwest of Dillon, and crosses Williams River at the Marble Bros. ranch.

Signal: A rock cairn about 6 feet high.

Station mark: A United States Geological Survey triangulation tablet set in rock, distant 3.5 feet southeast of signal; true azimuth 326° 46' 41".

[Latitude 39° 47' 08.568". Longitude 106° 04' 35.563".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	Log. meters.	Miles.
Powell.....	83 00 47	262 50 22	4.35672	14.128
Eagles Nest.....	87 26 32	267 15 47	4.36925	14.541
Lone Peak.....	108 52 25.99	288 38 46.29	4.5070077	19.969
Kremmling.....	138 57 19.53	318 46 43.44	4.5539286	22.247
Elk.....	174 01 40.81	353 59 42.14	4.6234818	26.112
Byers.....	231 42 46.97	51 47 46.36	4.1509118	8.796
Parmigan.....	337 29 48.03	157 31 44.82	4.0558764	7.067

**WALDEN STANDPIPE, JACKSON COUNTY, COLO. (Not occupied.)**

Standpipe in the town of Walden.

Signal and station mark: Center of standpipe.

Sighted from two stations; position doubtful.

[Latitude 40° 43' 46.1". Longitude 106° 18' 38.7".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	<i>Log. meters.</i>	<i>Miles.</i>
Shipman.....	236 50 31	56 58 21	4.30454	12.53
Richthofen.....	311 31 53	131 46 51	4.63765	26.97

**WHITELEY, GRAND COUNTY, COLO.**

On the highest part of the Whiteley Mountain about 1.5 miles north of Muddy Creek, and about 25 miles north of Kremmling by the Kremmling-Steamboat road. The station is about 2 miles northeast of Martin post office on Muddy Creek, from which a good trail leads around the north side of the mountain to gap at east side, from which the station was reached. Pack animal was taken to the top, but climbing was rough. There was water in gap of timber on west side of draw to north, about 800 feet from gap. Water can also be had farther down the draw. Feed good.

Signal: Cairn 7 feet high with pine tree in center.

Station mark: United States Geological Survey bronze tablet, set in 6 by 8 by 24 inch stone, over which was built the cairn, 7 feet high, with pine tree in center.

[Latitude 40° 19' 04.948". Longitude 106° 29' 33.500".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	<i>Log. meters.</i>	<i>Miles.</i>
Piney.....	00 21 47.57	180 21 38.05	4.7438366	34.450
Gore.....	53 04 50	232 58 29	4.24118	10.83
Flattop.....	56 23 04.51	236 00 14.75	4.7815885	37.578
Rabbit Ears.....	140 32 49.36	320 28 15.12	4.1960495	9.759
Elk.....	299 01 58.01	119 16 06.32	4.5507498	22.085
Kremmling.....	339 30 29.59	159 35 56.28	4.5352979	21.313
Lone Peak.....	353 55 47.44	173.58 08.01	4.6905859	30.474

**WHITE PINE, LARIMER COUNTY, COLO. (Not occupied.)**

Highest tree on summit of White Pine Mountain, which lies between the headwaters of Big Thompson River and Buckhorn Creek.

Signal and station mark: Highest tree on summit.

[Latitude 40° 36' 18.0". Longitude 105° 26' 44.9".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	<i>Log. meters.</i>	<i>Miles.</i>
Hague.....	51 47 24.9	231 39 36.9	4.33404	13.41
North Bald.....	131 41 41.3	311 31 47.3	4.45656	17.78
Livermore.....	217 31 54.7	37 37 56.0	4.32922	13.26
Horsetooth.....	288 51 00.5	109 00 45.0	4.34920	13.89

**AMES, ALBANY COUNTY, WYO. (Not occupied.)**

Ames monument on summit of the Sherman Hill near the town of Sherman, on the Union Pacific Railroad. The monument is about 25 feet high, and was built by the Union Pacific Railroad.

Station mark and signal: Apex of monument.

[Latitude  $41^{\circ} 07' 52.3''$ . Longitude  $105^{\circ} 23' 51.3''$ .]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	Log. meters.	Miles.
Dead Tree.....	46 01 55	225 52 43	4.43625	16.98
Gale.....	59 25 02	239 17 27	4.27349	11.67
Twin.....	310 01 09	130 06 17	4.15523	8.88

**GALE, ALBANY COUNTY, WYO.**

A prominent rocky peak near the north end of Boulder Ridge about  $1\frac{1}{2}$  miles north of Colorado-Wyoming boundary line. About 9 miles southwest of Tie Siding and 500 yards north of road from there to North Park via Boulder Ridge. About 5 miles northwest of well-known rocky peak called Diamond Peak.

Station mark: A bronze triangulation tablet cemented in solid rock.

Signal: A pole quadripod with flags and target.

[Latitude  $41^{\circ} 02' 42.170''$  (K);  $41^{\circ} 02' 42.12''$  (T). Longitude  $105^{\circ} 35' 23.180''$  (K);  $105^{\circ} 35' 22.88''$  (T)]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	Log. meters.	Miles.
Black.....	11 58 23.6	191 56 29.6	4.29299	12.20
South Bald.....	15 23 03.88	195 18 54.70	4.5270298	20.911
North Bald.....	17 08 24.80	197 00 07.62	4.4948318	19.417
Dead Tree.....	20 14 37.57	200 13 00.16	4.0014830	6.235
Little Bald.....	34 12 32.58	214 05 59.14	4.3980700	15.539
Bull.....	55 33 35.26	235 23 59.04	4.3967232	15.491
Red.....	79 12 14.59	258 58 40.34	4.4701158	18.343
Jelm (K).....	100 13 24.05	279 58 09.24	4.5187672	20.517
Jelm (T).....	100 13 17.46	279 58 02.71	4.5187373	20.516
Ames.....	239 17 27	59 25 02	4.27349	11.67
Twin.....	269 07 07.21	89 19 49.38	4.4331210	16.845
Cap Rock.....	303 29 36.10	123 35 01.77	4.1434427	8.646
Livermore (K).....	321 44 50.36	141 56 32.72	4.6089706	25.253
Livermore (T).....	321 44 53.11	141 56 35.40	4.6089354	25.252
Diamond.....	340 33 10	160 34 22	3.88797	4.81

NOTE.—(K)=values obtained by Kendall from the southeast; (T)=values obtained by Tatum from the south.

**JELM, ALBANY COUNTY, WYO.**

Situated about 3 miles east-southeast of Woods post office on the highest part of the mountain by that name. A tripod of poles erected over center.

Station mark: A bronze triangulation tablet cemented in solid rock.

[Latitude  $41^{\circ} 05' 49.810''$  (K);  $41^{\circ} 05' 49.71''$  (T). Longitude  $105^{\circ} 58' 35.600''$  (K);  $105^{\circ} 58' 35.22''$  (T).]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	Log. meters.	Miles.
Shipman.....	15 54 30.39	195 50 32.61	4.4914620	19.267
Twin.....	274 57 51.29	95 25 48.70	4.7770594	37.189
Gale (K).....	279 58 09.24	100 13 24.05	4.5187672	20.517
Gale (T).....	279 58 02.71	100 13 17.46	4.5187373	20.516
Dead Tree.....	297 30 12.12	117 43 48.71	4.5158409	20.379
Little Bald.....	324 57 45.72	145 06 25.18	4.5094200	20.080
North Bald.....	326 38 49.41	146 49 44.44	4.6298236	26.496
Bull.....	328 52 08.02	148 57 45.15	4.3665273	14.450
Red.....	342 40 01.03	162 41 40.76	4.0760940	7.404

NOTE.—(K)=values obtained by Kendall from the southeast; (T)=values obtained by Tatum from the south.

**TWIN, LARAMIE COUNTY, WYO.**

A station of the United States Coast and Geodetic Survey.

On the highest point of the more eastern one of the two peaks known as Twin Mountain, about 20 miles a little south of west from Cheyenne and 7 miles by road southwest

of Granite Canyon, a station on the Union Pacific Railroad. The station is marked by a standard disk of the United States Coast and Geodetic Survey, is 0.15 meter above the station and 3.494 meters distant in azimuth  $159^{\circ} 58'$ . The bronze tablet marking the United States Geological Survey triangulation station "East Twin" is 0.16 meter above the station and 2.674 meters distant in azimuth  $96^{\circ} 08'$ . Azimuth observations were made at this station.

[Latitude  $41^{\circ} 02' 54.064''$ . Longitude  $105^{\circ} 16' 02.530''$ .]

To station—	Azimuth.	Back azimuth.	Distance.	
			<i>Log. meters.</i>	<i>Miles.</i>
Livermore.....	3 39 06.44	183 38 08.85	4.5104191	20.127
Hague.....	27 09 54.59	206 55 04.95	4.8468583	43.673
North Bald.....	50 23 31.46	230 06 34.16	4.6746935	29.379
Cap Rock.....	62 38 23.72	242 31 07.75	4.2427743	10.867
Gale.....	89 19 49.38	269 07 07.21	4.4331210	16.845
Jelm.....	95 25 48.70	274 57 51.29	4.7770594	37.189
Ames.....	130 06 17	310 01 09	4.15523	8.88
Horsetooth.....	353 54 24.76	173 57 12.15	4.7543881	35.297

# IDAHO.

## TRIANGULATION STATIONS.

Ammon, Cranes Flat, Henry, Irwin, Lanes Creek, Malad City, Mink Creek, Pocatello, Portneuf, Shelley, Soda Springs, and Sterrett quadrangles.

BANNOCK, BEAR LAKE, BINGHAM, BONNEVILLE, FRANKLIN, AND ONEIDA COUNTIES.

The following geographic positions were determined in 1915 by T. M. Bannon and H. H. Hodgeson and are based on United States Coast and Geodetic Survey preliminary positions of triangulation stations Henry and Woodall, North American datum.

### ALEXANDER, BANNOCK COUNTY, IDAHO. (Not occupied.)

On the northwest end of old volcanic crater, about 2½ miles west of Alexander. One-half mile south of Oregon Short Line Railroad, one-half mile north of the wagon road west from Alexander to Central and Lund. A north-south section line passes by the station. Easily reached from the ranch at the northwest foot of mountain.

Reference marks: (1) A tablet 12.25 feet east; (2) chiseled cross on rock 51 feet southwest at the outer edge of base of mountain. (The latter was the instrument station.)

Station mark: An iron rod driven in the ashes under a big monument.

[Latitude 42° 39' 19.2". Longitude 111° 44' 57.3".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	<i>Log. meters.</i>	<i>Miles.</i>
Baldy.....	42 41 14.	222 34 04	4.32271	13.064
Backbone.....	165 16 56	345 14 53	4.21143	10.110
Tennile.....	187 16 51	7 17 28	3.98547	6.009

### BACKBONE, BANNOCK COUNTY, IDAHO.

About 5 miles southeast of Hatch, on highest point of rocky backbone, about 4 miles northwest of Tennile Pass. It is in the southeast corner of sec. 20, T. 7 S., R. 40 E., Boise meridian. The station can best be reached from the east side.

Signal: Cedar tree, bushy top, cairn around base and centered over station mark.

Reference mark A: Chiseled cross in rock, distant from station 10 feet and in true azimuth 321° 31'.

Reference mark B: Chiseled cross in rock, distant from station 5 feet and in true azimuth 76° 02'.

Station mark: Bronze triangulation tablet cemented in rock.

[Latitude 42° 47' 49.27". Longitude 111° 47' 59.23".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	<i>Log. meters.</i>	<i>Miles.</i>
Baldy.....	17 56 30.10	197 51 30.28	4.5157369	20.375
Lund.....	39 25 20	219 18 58	4.30511	12.545
Bancroft.....	39 53 10	219 49 41	4.03831	6.787
Thirty-five.....	75 32 34	255 25 24	4.17266	9.247
Putnam.....	120 22 18	300 07 28	4.53739	21.416
Twenty-four Mile.....	157 20 45.20	337 17 23.37	4.2421081	10.851
Corral.....	219 25 14.80	39 30 17.48	4.2013538	9.879
Woodall.....	281 58 17.14	102 09 45.24	4.3720733	14.636
Three Mile.....	298 16 49	118 25 59	4.31886	12.948
Ten Mile.....	318 51 32.25	138 54 12.39	3.9113267	5.066
Alexander.....	345 14 53	165 16 56	4.21143	10.110

**BALDY, BANNOCK COUNTY, IDAHO.**

Sharp peak known as Baldy Mountain, in sec. 29, T. 10 S., R. 39 E., on the divide between Bear River and Marsh Lake of Portneuf River.

Signal and station mark: Seven-foot rock cairn.

[Latitude 42° 30' 58.06''. Longitude 111° 55' 21.70'']

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	Log. meters.	Miles.
Cottonwood.....	16 37 31	196 35 48	4.08625	7.578
Oxford.....	27 46 50.92	207 39 47.33	4.4898346	19.195
Elkhorn.....	66 23 02	246 08 05	4.52073	20.610
Lund.....	170 01 38	350 00 17	4.19960	9.839
Bancroft.....	187 38 59	7 40 16	4.36218	14.306
Backbone.....	197 51 30.28	17 56 30.10	4.5157369	20.375
Tenmile.....	211 36 04.41	31 43 43.79	4.4689889	18.295
Alexander.....	222 34 04	42 41 14	4.32271	13.064
Soda.....	280 13 09.98	100 28 20.42	4.4954038	19.443
Paris.....	318 18 03.46	138 33 11.27	4.6671326	28.872
Cleveland.....	332 37 47	152 44 11	4.46028	17.932
Treasureton.....	348 04 12.53	168 06 38.66	4.3803534	14.918

**BANCROFT, BANNOCK COUNTY, IDAHO. (Not occupied.)**

Steel railroad water tank in the town of Bancroft, Idaho.

Station mark and signal: Center of tank.

[Latitude 42° 43' 17.5''. Longitude 111° 53' 07.1'']

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	Log. meters.	Miles.
Baldy.....	7 40 16	187 38 59	4.36218	14.306
Backbone.....	219 49 41	39 53 10	4.03831	6.787
Tenmile.....	259 40 09	79 46 18	4.09930	7.810

**BLACKFOOT, BINGHAM COUNTY, IDAHO.**

On bare summit near the south end of Blackfoot Mountains, near the head of and on the west side of Brush Creek. It is about 2 miles west of an old sawmill site in Brush Creek and the signal can be seen from near this site. To reach Blackfoot triangulation station the best route is to follow the road up left fork of Mill Creek from the Mill Creek crossing of the Blackfoot Dam and Idaho Falls road. Cross over the head of Mill Creek into Brush Creek drainage and continue on road to the old sawmill site mentioned above. Thence up Brush Creek for about 1 mile, thence climb to summit of ridge on left and follow ridge north to station. An abundance of good water in Brush Creek at the old sawmill site.

Signal: Pine tree, brushy top, cairn around base and centered over station mark.

Reference mark A: Chiseled cross in rock, distant from station 3.6 feet, true azimuth 338° 09'.

Reference mark B: Chiseled cross in rock, distant from station 5.8 feet, true azimuth 36° 05'.

Station mark: Bronze triangulation tablet cemented in rock.

[Latitude 43° 11' 52.48''. Longitude 111° 52' 29.89'']

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	Log. meters.	Miles.
Twenty-four Mile.....	1 11 15.36	181 10 57.61	4.4537756	17.665
Higham.....	69 45 28.18	249 36 56.50	4.2556054	11.193
Sugarloaf.....	266 03 12.14	86 14 54.13	4.3655046	14.416
Paradise.....	318 50 57.61	138 54 39.75	4.0475095	6.932

**CAMP, BANNOCK COUNTY, IDAHO.**

In the northeast corner of sec. 29, T. 5 S., R. 42 E., Boise meridian. It is about 7 miles north from the town of Henry on summit of sharp ridge northwest of Goose Lake. Can be reached from any direction.

Station mark: Bronze triangulation tablet cemented in rock.

Signal: Flagpole, cairn around base and cemented over station mark.

Reference mark A: Chiseled cross in rock, distant from station 8.8 feet, true azimuth 306° 11'.

Reference mark B: Chiseled cross in rock, distant from station 11.3 feet, true azimuth 106° 20'.

[Latitude 42° 57' 43.4". Longitude 111° 33' 04.4".]

To station—	Azimuth.	Back azimuth.	Distance.	
			<i>Log. meters.</i>	<i>Miles.</i>
Corral.....	59 19 18	239 14 12	4.07424	7.372
Limerock.....	141 30 08	321 27 57	3.84322	4.331
Henry.....	290 35 57	110 41 58	4.11006	8.006

**CARIBOU, BONNEVILLE COUNTY, IDAHO.**

On highest peak on Caribou Mountain, which is a high, isolated mountain 7 or 8 miles east of John Gray Lake. This station can best be reached from Gray, Idaho, by following road up the north fork of Eagle Creek to the Evergreen mine, thence by trail to the second saddle south of station; thence along ridge north. Can take animals to station. An abundance of good water in head of North Eagle Creek.

Signal: Pine tree, brushy top cairn around base and centered over station mark.

Reference mark A: Chiseled cross in rock, distant from station 18.9 feet, true azimuth 50° 58'.

Reference mark B: Chiseled cross in rock, distant from station 27.1 feet, true azimuth 356° 24'.

Station mark: Bronze tablet cemented in rock.

[Latitude 43° 05' 37.58". Longitude 111° 18' 39.31".]

To station—	Azimuth.	Back azimuth.	Distance.	
			<i>Log. meters.</i>	<i>Miles.</i>
Henry.....	21 31 05.56	201 27 18.23	4.3140253	12.805
Grays Lake ranger station.....	37 57 00.00	217 54 17.00	3.94288	5.448
Corral.....	55 20 02.89	235 05 06.13	4.5504929	22.534
Limerock.....	69 06 14.83	248 54 13.47	4.4084954	15.916
Paradise.....	94 51 10.94	274 31 45.20	4.5877197	24.047
Sugarloaf.....	120 07 18.34	299 55 50.84	4.4188445	16.300

**CLEVELAND, BANNOCK COUNTY, IDAHO.**

On a rocky-topped, grassy hill divide, at the extreme east head of Battle Creek. Visible from both Treasuron, 5 miles west, and Cleveland, 5 miles northeast. The Oneida power plant on Bear River is at the east foot of hill or mountain 2 miles distant.

Reference mark: A tablet cemented in solid rock 13 feet northeast.

Station mark: A chiseled cross on solid rock under a large monument.

[Latitude 42° 17' 07.0". Longitude 111° 45' 42.5".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	<i>Log. meters.</i>	<i>Miles.</i>
Oneida.....	30 56 26	210 54 04	3.54830	2.196
Clifton.....	50 25 06	230 17 29	4.30632	12.580
Oxford.....	86 35 33	266 22 09	4.44280	17.225
Treasureton.....	104 33 48	284 29 44	3.93340	5.330
Baldy.....	152 44 11	332 37 47	4.46028	17.932
Surge.....	176 01 27	356 01 32	4.45941	17.896
Soda.....	221 13 19	41 21 57	4.42568	16.559

**CLIFTON, ONEIDA COUNTY, IDAHO.**

On a lone hill in Cache Valley, north of Bear River and west of Battle Creek. About 2 miles southeast of Clifton, Idaho. The wagon road from Clifton to Preston passes along the west foot of the hill. The hill is between the present location of Oregon Short Line Railroad and the abandoned narrow-gage roadbed.

Station mark: A tablet cemented in rock under a very small monument and tree signal.

Reference mark: A chiseled cross on small rock cropping on the west slope of hill 35.25 feet west.

[Latitude 42° 10' 08.33". Longitude 111° 57' 02.22".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	<i>Log. meters.</i>	<i>Miles.</i>
Burgeson.....	8 55 47	188 54 19	4.28742	12.044
Oxford.....	132 52 02.15	312 46 07.53	4.2175164	10.253
Treasureton.....	205 44 00.94	25 47 34.16	4.2235743	10.397
Cleveland.....	230 17 29	50 25 06	4.30632	12.580
Oneida.....	234 16 14	54 22 57	4.22925	10.534
Paris.....	263 20 30.55	83 36 42.82	4.5242844	20.779
Doubletop.....	311 39 33	131 51 12	4.50711	19.976
Smart.....	326 30 28.72	146 35 31.60	4.2749506	11.703

**CORRAL, BANNOCK COUNTY, IDAHO.**

About 7 miles by road south of Blackfoot dam, on one of highest points on ridge lying directly west of and 10 miles from the town of Henry and on the west side of Blackfoot Storage Reservoir. It is the south part of sec. 8, T. 6 S., R. 41 E., Boise meridian. It can be reached easily from any direction.

Signal: Flagpole, rock cairn around base and centered over station mark.

Reference mark A: Chiseled cross in rock distant from station 12 feet and in true azimuth 222° 42'.

Reference mark B: Chiseled cross in rock distant from station 14 feet and in true azimuth 316° 55'.

Station mark: Bronze tablet cemented in rock.

[Latitude 42° 54' 27.03". Longitude 111° 40' 34.19".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	<i>Log. meters.</i>	<i>Miles.</i>
Tenmile.....	14 29 20.38	194 26, 58.16	4.2792015	11.818
Backbone.....	39 30 17.48	219 25 14.80	4.2013538	9.879
Twenty-four Mile.....	102 55 21.85	282 46 56.72	4.2368640	10.720
Limerock.....	206 55 04.51	26 58 00.47	4.1111331	8.026
Caribou.....	235 05 06.13	55 20 02.89	4.5594929	22.534
Camp.....	239 14 12	59 19 18	4.07424	7.372
Henry.....	266 00 34.48	86 11 42.85	4.3486254	13.867
Woodall.....	323 03 45.50	143 10 11.77	4.3324755	13.361
Lake.....	315 11 44	135 15 41	4.05034	6.978



**COTTONWOOD, BANNOCK COUNTY, IDAHO. (Not occupied.)**

On a sharp prominent peak in sec. 1, T. 12 S., R. 38 E., on divide, west side of Cottonwood Creek, near the head of the creek, about 5 miles northeast of Swan Lake post office.

Station mark: Flag on highest point.

[Latitude 42° 24' 38.8". Longitude 111° 57' 54.5".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	<i>Log. meters.</i>	<i>Miles.</i>
Oxford.....	34 51 02	214 45 31	4.28043	11.852
Baldy.....	196 35 48	16 37 31	4.08625	7.578
Treasureton.....	324 18 50	144 22 59	4.16173	9.027

**DAM, BANNOCK COUNTY, IDAHO.**

The station is on the highest point of ridge about 3 miles west of Blackfoot dam. It can be reached easily by going northwest up long ridge from the center of sec. 11, T. 5 S., R. 40 E. Boise meridian; the station is on the highest part of this ridge.

Signal: Cairn 9 feet high centered over station mark.

Reference mark A: Chiseled cross in rock distant from station 11 feet southwest.

Reference mark B: Chiseled cross in rock distant from station 7.8 feet northwest.

[Latitude 43° 00' 44.4". Longitude 111° 46' 29.2".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	<i>Log. meters.</i>	<i>Miles.</i>
Twenty-four Mile.....	48 19 53	228 15 40	4.06949	7.292
Paradise.....	176 11 30	356 11 05	4.08776	7.605
Limerock.....	270 28 56	90 35 54	4.14264	8.630

**ELKHORN, BANNOCK AND ONEIDA COUNTIES, IDAHO. (Not occupied.)**

A station of the Wheeler Survey.

Station mark: Summit of peak.

[Latitude 42° 23' 45.3". Longitude 112° 17' 30.4".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	<i>Log. meters.</i>	<i>Miles.</i>
Baldy.....	246 08 05	66 23 02	4.52073	20.610
Treasureton.....	285 51 00	106 08 23	4.56582	22.865
Oxford.....	311 02 30	131 10 22	4.32804	13.224

**GRAYS LAKE RANGER STATION, BONNEVILLE COUNTY, IDAHO. (Not occupied.)**

Grays Lake ranger station is at the southeast end of John Gray Lake and is a square frame house, with a pyramid roof.

Station mark and signal: Center of house.

[Latitude 43° 01' 53.5". Longitude 111° 22' 37.5".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	<i>Log. meters.</i>	<i>Miles.</i>
Limerock.....	83 07 07	262 57 48	4.27118	11.602
Caribou.....	217 54 17	37 57 00	3.94288	5.448

**HENRY, BANNOCK COUNTY, IDAHO.**

About 6.5 miles nearly east of Henry post office, probably 1 mile north. It can be reached by road running toward south end of Grays Lake and then to north of canyon. From here trail by horseback to top of hill which is bald on top and all sides except on north, which is covered with pine trees. The top of hill is covered with small rock. Station is on highest part of peak.

Signal: Cairn 6 feet at base and 7 feet high, with small pine in middle with tuft on top.

Station mark: Tablet set under signal cairn.

[Latitude 42° 55' 16.19". Longitude 111° 24' 12.59".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	Log. meters.	Miles.
Woodall.....	26 40 50.00	206 36 08.92	4.3209418	13.010
Lake.....	56 38 11	236 30 33	4.23600	10.699
Corral.....	86 11 42.85	266 00 34.48	4.3486254	13.867
Camp.....	110 41 58	290 35 57	4.11006	8.006
Limerock.....	121 26 35.03	301 18 21.99	4.2833539	11.932
Caribou.....	201 27 18.23	21 31 05.56	4.3140253	12.805

**HIGHAM, BINGHAM COUNTY, IDAHO.**

On Higham Peak in the southeast corner of T. 3 S., R. 37 E. Boise meridian, in the northeast corner of the Fort Hall Indian Reservation. It is at the head of Cold and Wood creeks and about 5 miles east of Old Fort Hall. A public road passes within a mile of the peak (and on the south side) and the climb to the summit from the road is easily made.

Station mark: Bronze tablet cemented in rock and stamped with the elevation above sea level, 6,725.

Signal: Aspen, brushy top, cairn around base and centered over station mark.

Reference mark A: Chiseled cross in rock, distant from station 28.4 feet, true azimuth 94° 00'.

Reference mark B: Chiseled cross in rock, distant from station 6.2 feet, true azimuth 200° 10'.

[Latitude 43° 08' 29.84". Longitude 112° 04' 57.77".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	Log. meters.	Miles.
Putnam.....	17 37 37	197 34 17	4.34140	13.638
Blackfoot.....	249 36 56.50	69 45 28.18	4.2556054	11.193
Paradise.....	274 58 03.45	95 10 16.78	4.3863043	15.124
Twenty-four Mile.....	323 32 23.14	143 40 35.86	4.4399866	17.113

**LAKE, BANNOCK COUNTY, IDAHO.**

Six miles south of Henry and 2 miles west of Dovell's shearing corral; on second hill north of China Hat. It is on south edge of the Blackfoot storage reservoir.

Station mark: Bronze tablet cemented in rock.

Signal: Flagpole, cairn around base and centered over station mark.

Reference mark A: Chiseled cross in rock, distant from station 10.5 feet southwest.

Reference mark B: Chiseled cross in rock, distant from station 8.35 feet northwest.

[Latitude 42° 50' 08.7". Longitude 111° 34' 45.8".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	Log. meters.	Miles.
Corral.....	135 15 41	315 11 44	4.05034	6.978
Henry.....	236 30 33	56 38 11	4.23600	10.699
Woodall.....	331 32 55	151 35 25	4.02098	6.522

**LIMEROCK, BANNOCK COUNTY, IDAHO.**

In the southwest corner of sec. 1, T. 5 S., R. 41 E. Boise meridian. On highest point of limestone ridge about 10 miles by road from the town of Henry and about 2 miles west of Meadow Creek Springs. It can be reached from Henry by following northward for about 4 miles the road to Wayan post office, thence by road westward across Meadow Creek, thence northwest to low saddle on the road from Grays Lake to Blackfoot Dam. From this point the station is about a 1,000-foot climb to northward.

Reference mark A: Chiseled cross in rock, distant from station 19.5 feet, true azimuth 152° 44'.

Reference mark B: Chiseled cross in rock, distant from station 11.5 feet, true azimuth 304° 48'.

Signal: Pine tree, brushy top, cairn around base and centered over station mark.

Station mark: Bronze tablet cemented in rock.

[Latitude 43° 00' 40.16". Longitude 111° 36' 15.99".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	Log. meters.	Miles.
Corral .....	26 58 00.47	206 55 04.51	4.1111331	8.026
Twenty-four-Mile.....	71 22 40.35	251 11 18.72	4.3788028	14.865
Paradise.....	130 06 11.46	309 58 48.18	4.2829820	11.922
Sugarloaf.....	182 58 55.42	2 59 30.60	4.3489896	13.878
Caribou.....	248 54 13.47	69 06 14.83	4.4084954	15.916
Grays Lake ranger station.....	262 57 48	83 07 07	4.27118	11.602
Henry.....	301 18 21.99	121 26 35.03	4.2833539	11.932
Dam.....	90 35 54'	270 28 56	4.14264	8.630
Camp.....	321 27 57	141 30 08	3.84322	4.331

**LUND, BANNOCK COUNTY, IDAHO. (Not occupied.)**

Station mark: Dead tree.

[Latitude 42° 39' 23.5". Longitude 111° 57' 22.1".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	Log. meters.	Miles.
Backbone.....	219 18 58	39 25 20	4.30511	12.545
Soda.....	302 12 37	122 29 10	4.59818	24.634
Baldy.....	350 00 17	170 01 38	4.19960	9.839

**ONEIDA POWER PLANT, BANNOCK COUNTY, IDAHO.**

On a grassy hill ridge on westside of Bear River about 3 miles southwest of the Oneida power plant, 5 miles east of Treasureton. The power line passes through the pass just north of signal. Easily reached from Cleveland, Treasureton, or the power plant.

Station mark: Chiseled cross on rock under a large monument.

[Latitude 42° 15' 28.7". Longitude 111° 47' 02.8".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	Log. meters.	Miles.
Smart.....	7 36 19	187 34 56	4.41206	16.048
Clifton.....	54 22 57	234 16 14	4.22925	10.534
Treasureton.....	128 38 36	308 35 25	3.91944	5.162
Cleveland.....	210 54 04	30 56 26	3.54330	2.196
Doubletop.....	341 56 37	162 01 44	4.51729	20.448

## OXFORD, ONEIDA COUNTY, IDAHO.

Coast and Geodetic Survey station about 6 miles west of the town of Oxford and about 15 miles east of Malad City, Idaho.

The best way to reach Oxford station is probably from the town of Oxford as this town is only 2 miles from the railroad station Oxford on the Oregon Short Line Railroad. There is a log road leading from the base of the mountain two-thirds of the distance to the summit, and from the end of this road a trail could be made with little labor to the summit.

This station was occupied by the Wheeler Survey about the year 1877; a rock cairn was found marking the place of their station. This cairn was torn down and a three-fourth-inch copper bolt was set firmly with lead in the solid surface rock, indicating the station selected by Assistant Welker. A heliotrope stand was erected at this point.

Four reference marks consisting of holes, drilled into ledges of rocks, each distant  $22\frac{1}{2}$  feet from the center station mark, were placed approximately north, south, east, and west.

[Latitude  $42^{\circ} 16' 11.82''$  ( $11.78^a$ ). Longitude  $112^{\circ} 05' 49.96''$  ( $49.95^a$ ).]

To station—	Azimuth.	Back azimuth.	Distance.	
			<i>Log. meters.</i>	<i>Miles.</i>
Elkhorn.....	131 10 22	311 02 30	4.32804	13.224
Baldy.....	207 39 47.33	27 46 50.92	4.4898346	19.195
Cottonwood.....	214 45 31	34 51 02	4.28043	11.852
Thatcher.....	234 08 24	54 18 02	4.39548	15.446
Soda.....	244 09 06.65	64 31 18.32	4.7004074	31.171
Treasureton.....	258 39 37.80	78 49 06.31	4.2953071	12.265
Cleveland.....	266 22 09	86 35 33	4.44280	17.225
Paris.....	279 06 48.20	99 28 56.16	4.6618328	28.522
Clifton.....	312 46 07.53	132 52 02.15	4.2175164	10.253
Smart.....	320 02 29.76	140 13 27.10	4.5451415	21.802

<sup>a</sup> Coast and Geodetic Survey preliminary value for 1915.

## PARADISE, BINGHAM COUNTY, IDAHO.

On highest point on divide between Willow Creek to northeast and Paradise Creek to south and southwest of station. It is about 12 miles northwest of Blackfoot Dam from which place it can be reached via road to Idaho Falls which passes within a mile (and on east side) of base of mountain.

Signal: Pine tree, brushy top, cairn around base and centered over station mark.

Reference mark A: Chiseled cross in rock, distant from station 7.0 feet, true azimuth  $89^{\circ} 14'$ .

Reference mark B: Chiseled cross in rock, distant from station 5.1 feet, true azimuth  $203^{\circ} 16'$ .

Station mark: Bronze tablet cemented in rock.

[Latitude  $43^{\circ} 07' 20.14''$ . Longitude  $111^{\circ} 47' 05.15''$ .]

To station—	Azimuth.	Back azimuth.	Distance.	
			<i>Log. meters.</i>	<i>Miles.</i>
Twenty-four Mile.....	21 40 03.92	201 36 04.58	4.3331803	13.382
Putnam.....	58 52 07	238 36 33	4.55834	22.474
Higham.....	95 10 16.78	274 58 03.45	4.3863043	15.124
Blackfoot.....	138 54 39.75	318 50 57.61	4.0475095	6.932
Sugarloaf.....	237 44 48.47	57 52 47.80	4.2718678	11.620
Caribou.....	274 31 45.20	94 51 10.94	4.5877197	24.047
Limerock.....	309 58 48.18	130 06 11.46	4.2829820	11.922
Dam.....	356 11 05	176 11 30	4.08776	7.635

**PARIS, BEAR LAKE COUNTY, IDAHO.**

On high rocky peak about 6 miles west of Paris; Idaho, on the Wasatch Range. A trail leads from Paris up gulch to small lake on north side of peak where good water and a fine place to camp can be found.

Signal: A cairn 6 feet high and 4 feet in diameter on west point of summit.

Station mark: An aluminum tablet cemented in solid rock 6 feet northeast of cairn.

[Latitude 42° 12' 11.46". Longitude 111° 32' 54.36".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	Log. meters.	Miles.
Doubletop.....	20 16 33	200 12 02	4.42928	16.687
Clifton.....	83 36 42.82	263 20 30.55	4.5242844	20.779
Oxford.....	99 28 56.16	279 06 48.20	4.6618328	28.522
Treasureton.....	113 36 26.65	293 23 46.37	4.4512144	17.562
Baldy.....	138 33 11.27	318 18 03.46	4.6671326	28.872
Soda.....	180 01 24.95	0 1 25.30	4.4645239	18.108

**PUTNAM, BANNOCK COUNTY, IDAHO. (Not occupied.)**

A former station of the Hayden Survey on the northern of the two highest peaks of the Putnam Mountains, about 15 miles southeast of Rossfork, 15 miles northeast of Pocatello and 15 miles north of west from Chesterfield.

Station mark: A cairn 5 feet high.

[Latitude 42° 57' 11.9". Longitude 112° 09' 51.0".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	Log. meters.	Miles.
Higham.....	197 34 17	17 37 37	4.34140	13.638
Paradise.....	238 36 33	58 52 07	4.55834	22.474
Twenty-four Mile.....	273 00 46	93 12 18	4.36261	14.320

**SMART MOUNTAIN,<sup>1</sup> FRANKLIN COUNTY, IDAHO.**

Sharp rocky point 1.5 miles northeast of Franklin in sec. 19, T. 16 S., R. 40 E.

Signal and station mark: Large flagpole.

[Latitude 42° 01' 39.00". Longitude 111° 49' 30.44".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	Log. meters.	Miles.
Burgeson.....	75 41 03	255 34 33	4.14102	8.597
Oxford.....	140 13 27.10	320 02 29.76	4.5451415	21.802
Clifton.....	146 35 31.60	326 30 28.72	4.2749506	11.703
Treasureton.....	174 16 54.33	354 15 23.98	4.4905081	19.225
Oneida.....	187 34 56	7 36 19	4.41206	16.048
Doubletop.....	292 37 54	112 44 30	4.16872	9.164

**SODA (SHERMAN PEAK), BEAR LAKE COUNTY, IDAHO.**

On the highest of three peaks which lie about 10 miles south of Soda Springs and about 9 miles west of Georgetown. It is locally known as Sherman Peak. The station can be best reached by going from Georgetown by wagon to Mr. Minnick's sawmill on west side of Nounan Valley, thence on horseback west on trail up canyon to divide, then follow divide southward to peak, which is bald on top.

Signal: Rock cairn 7 feet at base and 7½ feet high.

Station mark: Tablet set under rock cairn.

<sup>1</sup> See p. 135.

[Latitude 42° 27' 55.95". Longitude 111° 32' 53.84".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	Log. meters.	Miles.
Paris.....	0 1 25.30	180 01 24.95	4.4645239	13.108
Cleveland.....	41 21 57	221 13 19	4.42568	16.559
Treasureton.....	55 28 29.91	235 15 47.36	4.4975961	19.541
Oxford.....	64 31 18.32	244 09 06.65	4.7004074	31.171
Thatcher.....	74 04 33	253 52 14	4.41575	16.185
Baldy.....	100 28 20.42	280 13 09.98	4.4954038	19.443
Surge.....	114 06 42	293 57 04	4.33033	13.296
Lund.....	122 29 10	302 12 37	4.59818	24.634
Tenmile.....	153 36 45.22	333 29 11.98	4.5348718	21.292
Woodall.....	184 23 46.87	4 24 59.88	4.5050444	19.879

**SUGARLOAF, BINGHAM COUNTY, IDAHO.**

On rocky summit of hill northwest of John Gray Lake (hill locally known as Sugar Loaf). It is between Grays Lake Outlet and Homer Creek, and can be reached easily from a public road (Grays Lake to Idaho Falls), which passes about 2 miles south of the peak.

Signal: Aspen, brushy top, cairn around base and centered over station mark.

Reference mark A: Chiseled cross in rock, distant from station 7.2 feet, true azimuth 294° 41'.

Reference mark B: Chiseled cross in rock, distant from station 7.4 feet, true azimuth 41° 14'.

Station mark: Bronze tablet cemented in rock.

[Latitude 43° 12' 42.95". Longitude 111° 35' 24.51".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	Log. meters.	Miles.
Limerock.....	2° 59 30.60	182 58 55.42	4.3489896	13.878
Paradise.....	57 52 47.80	237 44 48.47	4.2718678	11.620
Blackfoot.....	86 14 54.13	266 03 12.14	4.3655046	14.416
Caribou.....	299 55 50.84	120 07 18.34	4.4188445	16.300

**SURGE, BANNOCK COUNTY, IDAHO. (Not occupied.)**

A black steel surge tank at the Grace plant of the Utah Power & Light Co. It is located about 3 miles west from the town of Grace.

Station mark and signal: Center of tank.

[Latitude 42° 32' 38.3". Longitude 111° 47' 09.7".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	Log. meters.	Miles.
Tenmile.....	190 55 11	10 57 17	4.34972	13.902
Soda.....	293 57 04	114 06 42	4.33033	13.296
Cleveland.....	356 01 32	176 01 27	4.45941	17.896

**TENMILE, BANNOCK COUNTY, IDAHO.**

About 12 miles northwest of Soda Springs, on sharp point near north end of Soda Springs Hills and just south of Tenmile Pass, from which it can be easily reached.

Reference mark A: Chiseled cross in rock, distant from station 33.2 feet, true azimuth 61° 34'.

Reference mark B: Chiseled cross in rock, distant from station 28.6 feet, true azimuth 104° 52'.

Signal: Pine tree, brushy top, cairn around base and centered over station mark.

Station mark: Bronze triangulation tablet cemented in rock.

[Latitude 42° 44' 30.22". Longitude 111° 44' 03.40".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	Log. meters.	Miles.
Alexander.....	7 17 28	187 16 51	3.98547	6.009
Surge.....	10 57 17	190 55 11	4.34972	13.902
Baldy.....	31 43 43.79	211 36 04.41	4.4689889	18.235
Bancroft.....	79 46 18	259 40 09	4.09930	7.810
Thirty-five.....	97 01 58	276 52 03	4.29942	12.381
Backbone.....	138 54 12.39	318 51 32.25	3.9113267	5.066
Corral.....	194 26 58.16	14 29 20.38	4.2792015	11.818
Woodall.....	265 59 09.52	86 07 57.19	4.2485258	11.012
Threemile.....	286 04 46	106 11 12	4.13074	8.396
Soda.....	333 29 11.98	153 36 45.22	4.5348718	21.292

**THATCHER, BANNOCK COUNTY, IDAHO. (Not occupied.)**

On a bald rock-dome hill on the south end of the high ridge between Bear River and Cottonwood Creek. From the hill the ridge breaks off very suddenly to Cottonwood Creek. About 6 miles east of Thatcher and the same distance northwest of Cleveland, in sec. 12, T. 12 S., R. 39 E.

Station mark: Flag held up by guys and a few rocks.

[Latitude 42° 24' 02.9". Longitude 111° 51' 09.1".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	Log. meters.	Miles.
Treasureton.....	4 24 14	184 23 50	4.02983	6.655
Oxford.....	54 18 02	234 08 24	4.39548	15.446
Soda.....	253 52 14	74 04 33	4.41575	16.185

**THIRTY-FIVE, BANNOCK COUNTY, IDAHO. (Not occupied.)**

The summit of a low rock-capped hill in sec. 35, T. 8 S., R. 38 E. Boise meridian. There are apparently three large rocks on the summit of this hill, the south rock being the highest and is the point sighted in each case.

Station mark and signal: Apparent highest point.

[Latitude 42° 45' 48.4". Longitude 111° 58' 32.9".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	Log. meters.	Miles.
Twenty-four Mile.....	201 03 19	21 07 08	4.32768	13.214
Backbone.....	255 25 24	75 32 34	4.17266	9.247
Tenmile.....	276 52 03	97 01 58	4.29942	12.381

**THREEMILE, BANNOCK COUNTY, IDAHO.**

On the summit of a low hill about 3 miles north of Soda Springs and locally known as Threemile Hill. It is on the west side of the Soda Springs-Henry road, and the summit is easily reached.

Signal: Rock cairn centered over station mark.

Reference mark A: Chiseled cross in rock, distant from station 29 feet.

Reference mark B: Chiseled cross in rock, distant from station 54.2 feet.

Station mark: Bronze triangulation tablet cemented in large rock projection 3 feet above the ground.

[Latitude 42° 42' 28.5". Longitude 111° 34' 33.0'']

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	Log. meters.	Miles.
Tenmile.....	106 11 12	286 04 46	4.13074	8.396
Backbone.....	118 25 59	298 16 49	4.31886	12.948
Woodall.....	223 24 57	43 27 17	3.83554	4.255

**TREASURETON, BANNOCK COUNTY, IDAHO.**

Three miles north of Treasureton post office, on divide between Cottonwood and Battle creeks, on end of sharp hill in sec. 11, T. 13 S., R. 39 E.

Signal and station mark: Cairn 7 feet high; tablet under cairn.

[Latitude 42° 18' 16.74". Longitude 111° 51' 45.03'']

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	Log. meters.	Miles.
Clifton.....	25 47 34.16	205 44 00.94	4.2235743	10.397
Oxford.....	78 49 06.31	258 39 37.80	4.2953071	12.265
Elkhorn.....	106 08 23	285 51 00	4.56582	22.865
Cottonwood.....	144 22 59	324 18 50	4.16173	9.027
Baldy.....	168 06 38.66	348 04 12.53	4.3803534	14.918
Thatcher.....	184 23 50	4 24 14	4.02983	6.655
Soda.....	235 15 47.36	55 28 29.91	4.4975961	19.541
Cleveland.....	284 29 44	104 33 48	3.93340	5.330
Paris.....	293 23 46.37	113 36 26.65	4.4512144	17.562
Oneida.....	308 35 25	128 38 36	3.91944	5.162
Smart.....	354 15 23.98	174 16 54.33	4.4905081	19.225

**TWENTY-FOUR MILE, BANNOCK COUNTY, IDAHO.**

On west side of sec. 34, T. 5 S., R. 39 E. Boise meridian. It is about 6 miles north of the town of Chesterfield, on highest point of limestone ridge between Corral Creek and Portneuf River. It is about 2 miles north of Devils Pass and can be reached from any direction.

Reference mark A: Chiseled cross in rock, distant from station 6.7 feet, true azimuth 60° 10'.

Reference mark B: Chiseled cross in rock, distant from station 13.3 feet, true azimuth 148° 01'.

Signal: Pine tree, brushy top, cairn around base and centered over station mark.

Station mark: Bronze triangulation tablet cemented in rock.

[Latitude 42° 56' 31.40". Longitude 111° 52' 55.88'']

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	Log. meters.	Miles.
Thirty-five.....	21 07 08	201 03 19	4.32768	13.214
Putnam.....	93 12 18	273 00 46	4.36261	14.320
Higham.....	143 40 35.86	323 32 23.14	4.4399866	17.113
Blackfoot.....	181 10 57.61	1 11 15.36	4.4537756	17.665
Paradise.....	201 36 04.58	21 40 03.92	4.3331803	13.382
Limerock.....	251 11 18.72	71 22 40.35	4.3788028	14.865
Corral.....	282 46 56.72	102 55 21.85	4.2368640	10.720
Backbone.....	337 17 23.37	157 20 45.20	4.2421081	10.851
Dam.....	228 15 40	48 19 53	4.06949	7.292



**WOODALL, BANNOCK COUNTY, IDAHO.**

About 10 miles northeast of Soda Springs, on high, bald peak, and is in sec. 2, T. 8 S., R. 42 E. It is about 0.8 mile east of Mr. Woodall's ranch. It can be reached by wagon road from Soda Springs to Woodall's ranch, thence on horseback to top.

Station mark: Tablet set in rock under cairn 4 feet at base and 6 feet high, with small pine set in center of cairn.

Signal: Cairn 4 feet at base and 6 feet high, with small pine set in center of cairn.

[Latitude 42° 45' 09.69". Longitude 111° 31' 06.00".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	<i>Log. meters.</i>	<i>Miles.</i>
Soda.....	4 24 59.88	184 23 46.87	4.5050444	19.879
Threemile.....	43 27 17	223 24 57	3.83554	4.255
Tenmile.....	86 07 57.19	265 59 09.52	4.2485258	11.012
Backbone.....	102 09 45.24	281 58 17.14	4.3720733	14.636
Corral.....	143 10 11.77	323 03 45.50	4.3324755	13.361
Lake.....	151 35 25	331 32 55	4.02098	6.522
Henry.....	206 36 08.92	26 40 50.00	4.3209418	13.010

**DOUBLETOP, CACHE COUNTY, UTAH. (Not occupied.)**

Station mark: Summit of mountain.

[Latitude 41° 58' 34.3". Longitude 111° 39' 38.8".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	<i>Log. meters.</i>	<i>Miles.</i>
Smart.....	112 44 30	292 37 54	4.16872	9.164
Clifton.....	131 51 12	311 39 33	4.50711	19.976
Oneida.....	162 01 44	341 56 37	4.51729	20.448
Paris.....	200 12 02	20 16 33	4.42928	16.697



## IDAHO AND MONTANA.

### TRIANGULATION STATIONS.

Argo, Bay Horse, Casto, Custer, Dickey, Gibbons Pass, Junction, Mackay, May, Noble, Rabbit Foot, Salmon, Tilden, Trapper Peak, Vinegar Hill, and Watchtower Peak quadrangles.

BINGHAM, BLAINE, BOISE, CUSTER, FREMONT, IDAHO, AND LEMHI COUNTIES, IDAHO;  
BEAVERHEAD AND RAVALLI COUNTIES, MONT.

The following preliminary geographic positions were determined by T. M. Bannon in 1912 to 1915, inclusive. Positions north of stations Ram and Jerry, were originally computed on Hamilton-Helena mean datum (see Bull. 201) but 3.67'' has been subtracted from all latitudes and 1.37'' added to all longitudes to reduce them to approximate North American datum.

Positions, azimuths, and distances from Big Butte northwestward to Jerry were computed directly from preliminary values of United States Coast and Geodetic Survey stations Big Butte and Middle Butte on North American datum.

#### ADAMS SECTION CORNER, CUSTER COUNTY, IDAHO.

In center of east-west road starting from the Challis-Salmon road at Jack Adam's ranch. Northeast corner of Jack Adam's ranch.

Station mark: Section-corner stone.

[Latitude 44° 32' 11.76''. Longitude 114° 11' 32.47'']

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	Log. meters.	Miles.
Twin.....	105 52 10.00	285 40 14.00	4.36906	14.535
Grouse.....	247 22 09.00	67 26 17.00	3.92696	5.252

#### 1 A. P. 412, IDAHO-MONTANA BOUNDARY LINE (LEMHI COUNTY, IDAHO, AND RAVALLI COUNTY, MONT).

On a sharp rocky peak, timbered on south, summit Bitter Root Range at State line (Idaho-Montana) angle stone 1 A. P. 412 M. Easily reached by State-line trail which passes through the three saddles on the north, southeast, and west slopes of the peak. Good camping place in saddle on State-line trail at milepost 410. At milepost 409 cut-off trail goes north to Alta, joining wagon road near the forks of Hughes Creek. At milepost 407 trail goes southeast to Salmon River.

Station mark: A small chiseled hole in solid rock under a large rock monument.

Reference mark: A chiseled cross on stone marked "1 A. P. 412 M. I. M."

[Latitude 45° 35' 31.5'' Longitude 114° 05' 06.3'']

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	Log. meters.	Miles.
Piquett.....	152 19 15.00	332 14 44.00	4.24641	10.958
Trapper.....	153 39 11.00	333 30 06.00	4.56852	23.008
Deer.....	182 50 17.00	02 51 37.00	4.68456	30.055
Rocky.....	260 52 16.00	80 53 37.00	3.38367	1.503

**ANDERSON, CUSTER COUNTY, IDAHO.**

On the highest rocky-topped grassy hill on divide between Worm Springs and Joe Anderson's fork of Road Canyon creeks, near their heads and about half a mile west of the main divide between Salmon and Lost rivers. About 6 miles a little south of west from Dickey. Visible from Mackey, Dickey, Chilly, and Challis. The hill is very prominent. Iron section corner post marked "T. 10 N., R. 21 E., secs. 7-8" is less than half a mile west, on same ridge east of the first saddle. Easily reached with horses from all directions. Good camping grounds at any of the numerous springs close by.

Station mark: A tablet set in solid rock over which a large monument is centered.

Reference marks: (1) A chiseled cross on solid rock 10.2 feet southwest; (2) a chiseled cross on solid rock 6 feet east.

[Latitude 44° 11' 53.65'' Longitude 114° 01' 23.86'']

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	Log. meters.	Miles.
Jerry.....	23 42 00.73	203 38 30.38	4.2234693	10.395
Redwings.....	61 16 56.01	241 02 53.51	4.4873083	19.084
Spar.....	116 21 05.31	.....	4.0079358	6.328
Ram.....	126 29 51.15	.....	4.5016549	19.724
King.....	307 30 05.05	128 01 20.43	4.8814695	47.285
Mackay.....	322 46 05.29	142 59 35.09	4.6331939	26.702
Shelly.....	329 50 31.58	150 02 56.21	4.6782155	29.619
Porphyry.....	349 21 05.85	169 23 59.89	4.4801275	18.771

**ANTE, CUSTER COUNTY, IDAHO.**

On a flat long hill on main divide between East Fork of Lost River and Antelope Creek. The hill is between the heads of the two main forks of Cherry Creek, a tributary of Antelope Creek, and the extreme northeast head of East Fork of Lost River. About 5 miles east of Reed & Davis copper mine and 3 miles south of Shelly Mountain. Easily reached from all directions.

Station mark: A bench-mark tablet set in solid rock centered under a large monument.

Reference mark: A chiseled cross on solid rock 19.30 feet north.

[Latitude 43° 47' 50.6'' Longitude 113° 44' 56.3'']

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	Log. meters.	Miles.
Smiley.....	24 10 03	204 07 33	4.07471	7.380
Crawford.....	290 04 13	110 15 41	4.37489	14.732
Blizzard.....	348 47 53	168 51 15	4.52900	21.006

**ARCO, BLAINE COUNTY, IDAHO.**

On the first high grassy hill on the limestone ridges, north side of Big Lost River, 2 miles due north of Arco City. About 3 miles southeast of J. D. Martin's ranch on Lost River.

Station mark: An aluminum bench-mark tablet set in solid rock under center of a 7-foot monument.

Reference mark: A chiseled cross on solid rock 10.7 feet north.

[Latitude 43° 40' 00.92". Longitude 113° 17' 56.98".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	Log. meters.	Miles.
Arco School.....	3 57 54	183 57 52	3.55916	2.254
Hades.....	21 11 44.08	201 04 49.13	4.5745275	23.328
Inferno.....	39 26 16	219 15 52	4.50622	19.933
Blizzard.....	58 02 22.29	237 47 07.32	4.5458668	21.838
Crawford.....	114 23 25.36	294 16 13.96	4.1860354	9.536
King.....	189 32 30.56	9 33 35.10	4.1002561	7.827
Jumpoff.....	237 41 55.08	57 49 54.50	4.2639317	11.410
East Butte.....	289 54 05.70	110 20 22.05	4.7374676	33.948
Middle Butte.....	293 06 11.91	113 29 25.57	4.6936166	30.688
Big Butte.....	323 10 34.06	143 22 01.73	4.5739009	23.294

**ARCO SCHOOL, BLAINE COUNTY, IDAHO. (Not occupied.)**

Center of large brick schoolhouse in town of Arco.

[Latitude 43° 38' 03.7". Longitude 113° 18' 08.4".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	Log. meters.	Miles.
Blizzard.....	63 07 03	242 51 56	4.52040	20.596
Crawford.....	125 57 33	305 50 30	4.22926	10.536
Arco.....	183 57 56	3 58 14	3.55958	2.254

**BALDY, LEMHI COUNTY, IDAHO.**

On the highest point in center of a large flat-topped rocky mountain, locally known as Baldy or Salmon City Peak. About 6 miles by trail southwest of Salmon City. Easily reached by following timber road and Forest Service telephone line to a point southeast of peak, thence by trail to station. The Forest Service has a signal station on the west end of peak, and a small monument was built on east end of peak to sight Salmon City.

Station mark: A triangulation tablet cemented into rock set under a large monument.

Reference mark: A chiseled cross on solid rock 17.4 feet southeast.

[Latitude 45° 08' 43.45". Longitude 114° 00' 29.97".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	Log. meters.	Miles.
Grouse.....	6 02 34.04	185 58 56.13	4.8113331	40.243
Taylor.....	29 32 36.87	209 23 49.98	4.5205800	20.603
Black Mountain.....	38 09 27.54	217 55 14.24	4.6324732	26.658
Red Rock.....	64 19 11.00	244 01 19.00	4.5659160	22.870
Middle Fork.....	68 29 05.84	248 01 38.91	4.7389049	34.061
M. P. 12.....	82 11 06.00	261 49 50.00	4.59916	24.689
Wilson.....	82 47 32.87	262 21 21.60	4.68914	30.373
Puddin.....	85 58 37.87	265 32 16.00	4.68941	30.392
Bee Hive.....	101 24 57.88	281 01 53.55	4.6378441	26.990
Blue Nose.....	143 13 13.26	322 58 20.14	4.6587317	28.320
Sheep.....	207 32 21.66	27 42 58.24	4.6238484	26.134
Goldstone.....	274 41 20.59	94 59 45.10	4.5337146	21.236
Mill.....	297 35 26.00	117 43 25.00	4.27413	11.680
Sal.....	317 41 20.43	137 48 24.08	4.2891545	12.092

**BAY HORSE, CUSTER COUNTY, IDAHO. (Not occupied.)**

On the second hill north of Bay Horse Creek and mining camp. Easily reached from the cut-off road from Challis to Bay Horse.

Station mark: Center of big monument.

[Latitude 44° 25' 32.47". Longitude 114° 21' 23.75."']

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	Log. meters.	Miles.
Twin.....	153 09 16.00	333 04 15.00	4.32112	13.016
Grouse.....	233 11 05.00	53 22 08.00	4.41569	16.182

**BEAUTY, CUSTER COUNTY, IDAHO. (Not occupied.)**

On the highest peak in the Big Lost River Range, divide between the waters of Pahsimeroi and Big Lost River. About 6 miles northeast and visible from Dickey post office on the Mackay-Challis stage road. Can be reached only by a long, difficult climb afoot. Best route up Rock Creek from Dickey.

Reference mark: A chiseled cross on solid rock 37 feet south.

Station mark: A hole drilled for tablet under center of large monument.

[Latitude 44° 08' 16.4". Longitude 113° 46' 49.1."']

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	Log. meters.	Miles.
Porphyry (from south).....	31 13 58	211 06 44	4.42918	16.692
Jerry (from south).....	71 53 36	251 39 57	4.44025	17.124
Anderson (from south).....	109 07 13	288 57 38	4.31298	12.774
Redwings (from north).....	80 17 45	259 53 34	4.67276	29.249
Twin (from north).....	132 40 27	312 11 17	4.87564	46.664

**BEE HIVE, LEMHI COUNTY, IDAHO.**

On the highest of several rocky hills partly timbered, 4 miles northeast of Mount McGuire, about 0.5 mile northwest of the main divide between Middle Fork and Salmon rivers. The creek that empties into the Middle Fork near its junction with Salmon River heads in some lakes on both sides of the hill. The trail from the wagon road on the divide between Yellowjacket and Farney to Clear Creek, and down Clear Creek to Big Creek, passes about 4 miles north and east. About 34 miles northeast of Farney and Yellowjacket and 12 miles west of Shoup. Can be reached by following up the ridges from the river or from Clear Creek trail by taking the long timbered ridge at the big bend 7 miles from the passes between Wilson and Clear creeks.

Station mark: Triangulation tablet under monument.

Reference mark: A chiseled cross on solid rock 5.65 feet south.

[Latitude 45° 13' 17.31". Longitude 114° 33' 01.44."']

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	Log. meters.	Miles.
Middle Fork.....	15 57 59.73	195 53 33.85	4.4758179	18.586
Blue Nose.....	208 19 50.98	28 28 05.53	4.5026912	19.772
Baldy.....	281 01 53.55	101 24 57.88	4.6378441	26.990
Taylor.....	324 36 26.09	144 50 40.01	4.6600568	28.406

**BELL (FINGER), FREMONT COUNTY, IDAHO. (Not occupied.)**

On Bell Mountain, a high, prominent bell-shaped peak on the main backbone of Little Lost River Range. About 10 miles northeast of Clyde post office. Can be reached by a long difficult climb afoot.

Station mark: A bench mark tablet set in placed rock under center of large monument.

Reference mark: A chiseled cross on solid rock.

[Latitude 44° 14' 11.62" (from north); 44° 14' 11.7" (from south). Longitude 113° 11' 35.00" (from north) 113° 11' 35.4" (from south)].

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	<i>Log. meters.</i>	<i>Miles.</i>
Horse Prairie (from north).....	184 22 36	4 24 58	4.76622	36.272
E and W (from north).....	164 11 14	344 01 18	4.83559	42.554
King (from south).....	7 13 11	187 09 51	4.70993	31.863
Jumpoff (from south).....	352 33 38	172 37 15	4.73201	33.524

#### BEND, IDAHO COUNTY, IDAHO. (Not occupied.)

Highest peak south of Salmon in the vicinity where Lemhi, Idaho, and Salmon counties join.

[Latitude 45° 18' 37.5". Longitude 114° 47' 06.5".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	<i>Log. meters.</i>	<i>Miles.</i>
Blue Nose.....			4.58088	23.672
Trapper.....			4.87441	46.533
Rocky.....			4.81526	40.608
Piquett.....			4.81975	41.030

#### BENCH MARK 49, CUSTER COUNTY, IDAHO.

Cooperative bench-mark post at a corner of a fence on the main Challis-Salmon stage road about 3 miles northeast of Challis and 0.25 mile southwest of Jack Adams's ranch.

Station mark: Bench-mark post 49, elevation 4937.

[Latitude 44° 31' 52.73". Longitude 114° 12' 09.05".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	<i>Log. meters.</i>	<i>Miles.</i>
Twin.....	107 50 16.00	287 38 46.00	4.35774	14.161
Grouse.....	245 57 31.00	66 02 05.00	3.97436	5.858

#### BIG BUTTE, BLAINE COUNTY, IDAHO.

A United States Coast and Geodetic Survey station on "Big Butte," a well-known landmark on the Lavas between Big Lost and Snake rivers, 4 miles south of Cerro Grande siding on the Mackay branch of the Oregon Short Line Railroad. Water at Hollau Springs on the east side and Lozier Springs on the north side. Tabor post office and station is the nearest supply point. Easiest ascended from the north side.

Station mark: A United States Coast and Geodetic Survey tablet.

Reference mark: A United States Geological Survey bench-mark tablet in placed rock centered under large monument 11 feet west.

[Latitude 43° 23' 47.33". Longitude 113° 01' 18.56".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	<i>Log. meters.</i>	<i>Miles.</i>
Hades.....	82 18 06.88	261 59 47.29	4.5609470	22.610
Blizzard.....	102 29 45.13	282 03 05.83	4.7284855	33.253
Arco.....	143 22 01.73	323 10 34.06	4.5739009	23.294
Jumpoff.....	170 17 36.87	350 14 06.88	4.6066291	25.118
Middle Butte.....	245 20 45.83	65 32 29.48	4.4030997	15.720
East Butte.....	248 38 48.63	68 53 34.45	4.4923903	19.308

**BIG HOLE PASS, IDAHO-MONTANA BOUNDARY LINE, LEMHI COUNTY, IDAHO, AND  
BEAVERHEAD COUNTY, MONT.**

On a grassy hill on the Continental Divide, Idaho-Montana boundary line. About 1 mile south of the Big Hole Pass, through which the new road from Gibbonsville, Idaho, to the Big Hole Valley passes. The old wagon road, now used as a trail, came up a ridge from Gibbonsville almost west from the station. Good camping grounds and water in the pass on the new road.

Station mark: The 3 A. P. 444 M State boundary line.

Reference mark: Nail driven in blazed tree 94.7 feet east.

[Latitude 45° 32' 30.38". Longitude 113° 49' 31.87".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	Log. meters.	Miles.
Rocky.....	108 34 30.00	288 24 41.00	4.27502	11.705
Ruby.....	232 13 56.00	52 17 16.00	3.88587	4.778

**BLACK CAP, BLAINE COUNTY, IDAHO.**

On a low, grassy peak east side of the mouth of Dry Fork of Antelope Creek valley. The peak has a peculiar capping of black rock. About 3 miles east of Grouse post office, Miller's ranch. Section corner between secs. 20, 21, 29, and 28, at ranch, is about 2,700 feet southeast. The Dry Fork of Antelope Creek curves around the south and east foot of the peak. Easily reached from the ranches in the vicinity of Grouse School.

Station mark: A large nail driven between rocks centered under a large monument.

[Latitude 43° 39' 40.1". Longitude 113° 36' 40.0".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	Log. meters.	Miles.
Smiley.....	105 07 44	284 59 41	4.21874	10.282
Shelly.....	153 26 42	333 21 57	4.31382	12.799
Crawford.....	237 59 48	58 05 32	4.11927	8.178

**BLACK MOUNTAIN, CUSTER COUNTY, IDAHO.**

On a high rocky peak on main divide. Water to the east, south, and west drains into Camas Creek; that to the north into Panther Creek. Morgan Creek heads 1 mile east. The wagon road from Forney to Challis, where it passes over the main divide between Panther and Morgan creeks, is about 4 miles northeast of peak. Forney is about 10 miles northwest. Rabbitfoot mine is about 4 miles northwest. The ranger station on Panther Creek at the mouth of Opal Lake Creek is about 4 miles north. Good camping ground at the base of the peak.

Station mark: A chiseled cross on rock set under monument.

Reference mark: A triangulation tablet in solid rock 19.7 feet northwest.

[Latitude 44° 50' 28.88". Longitude 114° 20' 36.84".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	Log. meters.	Miles.
Middle Fork.....	118 51 41.22	298 38 30.60	4.4475912	17.416
Forney.....	183 52 35.93	3 53 02.83	4.0918756	7.678
Baldy.....	217 55 14.24	38 09 27.54	4.6324732	26.658
Taylor.....	244 03 48.05	64 09 13.92	4.0519739	7.003



**BLIZZARD, BLAINE COUNTY, IDAHO.**

On Iron Mountain, the highest rocky-topped grassy hill of Antelope Mountains, at the head of Lava and Cottonwood creeks to the north and east, and Iron Mine Creek and Fish Creek to the south and west. The hill is on the main divide between Lost River and Wood River drainage, about 6 miles due west of Martin post office and ranch, 30 miles southwest and visible from Arco town, 10 miles east of Crooks post office. Easily reached by following up Fish Creek from the west or Lava and Cottonwood creeks from north and east, quarter-section corner between secs. 24, 25, T. 2 N., R. 23 E., is on the east end of hill several hundred feet from top on north slope.

Station mark: A tablet set in placed rock under center of large monument.

Reference marks: (1) A chiseled cross on solid rock 8.7 feet southeast; (2) center of a smaller monument on east end of hill 141 feet east.

[Latitude 43° 29' 55.97". Longitude 113° 40' 04.17".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	Log. meters.	Miles.
Buzz.....	65 47 03	245 35 06	4.41015	15.97
Freedom.....	92 54 16	272 46 33	4.18023	9.41
Garfield.....	114 42 07	294 29 08	4.44566	17.34
Scorpion.....	130 22 51.43	310 13 53.10	4.3614759	14.283
Pion.....	134 48 17	314 41 02	4.30030	12.41
Smiley.....	152 57 16.65	332 51 25.44	4.3993359	15.584
Crawford.....	212 09 54.03	32 17 58.74	4.4705007	18.359
Arco.....	237 47 07.32	58 02 22.29	4.5458668	21.838
Martin.....	260 55 45	81 00 13	3.94707	5.501
Hades.....	315 01 09.21	135 09 27.23	4.3632852	14.343

**BONANZA, CUSTER COUNTY, IDAHO.**

On a rocky hill having scattering trees on top at the heads of Adair and Ramey creeks. It is the south one of two hills on the ridge south from the forks of Jordan and Yankee Fork creeks. About 3 miles south of Custer and the same distance southeast of Bonanza. Easily reached by trail up Adair Creek from Custer to the Black mine.

Station mark: A chiseled cross on rock set under a large rock monument and tree signal.

Reference mark: A chiseled cross on solid rock 12.3 feet west.

[Latitude 44° 21' 27.03". Longitude 114° 41' 25.72".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	Log. meters.	Miles.
Mount Eustes.....	170 35 44.78	350 34 53.29	3.9981961	6.188
Ram.....	267 32 27.43	87 47 01.06	4.4423271	17.206

**BUZZ, BLAINE COUNTY, IDAHO. (Not occupied.)**

On the west of the two highest hills on the grassy ridge dividing the waters of Fish and Muldoon creeks, about 5 miles south of Laidlow's big ranch on Muldoon Creek, 6 miles north and visible from Carey post office.

Station mark: Center of monument.

[Latitude 43° 24' 12.9". Longitude 113° 57' 26.3".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	Log. meters.	Miles.
Scorpion.....	192 56 37	12 59 37	4.41703	16.233
Freedom.....	216 08 38	36 12 49	4.14758	8.728
Blizzard.....	245 35 06	65 47 03	4.41015	15.974
Crooks.....		85 02 04	4.12860	8.355
Hades.....	278 04 55	98 24 56	4.60395	24.963

**CHALLIS, CUSTER COUNTY, IDAHO.**

On the first sagebrush hill on the divide between Garden and Challis creeks. About  $1\frac{1}{2}$  miles northwest of Challis and 1 mile north of Alexander Klug's ranch on Garden Creek, 2 miles west of Challis. The station commands a good view of the Challis Valley. Easily reached from Challis in any direction.

Station mark: Triangulation tablet set in rock under large monument.

Reference mark: A chiseled cross on big rock standing 1 foot out of the ground 16.8 feet south.

[Latitude  $44^{\circ} 31' 01.49''$ . Longitude  $114^{\circ} 15' 46.30''$ .]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	Log. meters.	Miles.
Twin.....	116 49 40	296 40 42	4.27740	11.769
Grouse.....	247 56 43	68 03 49	4.16020	8.986

**CHILLY, CUSTER COUNTY, IDAHO.**

On the highest point of a low isolated hill in Chilly Valley, about 2 miles west of Chilly post office and 5 miles south of Dickey post office. The junction of Thousand Springs Creek with Big Lost River at the Big Bend is about 4 miles southeast. Easily reached from Chilly and Dickey.

Station mark: A chiseled cross, hole with two big nails centered under a small rock monument.

Reference mark: A bench-mark aluminum tablet set in solid rock 9.4 feet north.

[Latitude  $44^{\circ} 04' 35.9''$ . Longitude  $113^{\circ} 54' 04.3''$ .]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	Log. meters.	Miles.
Jerry.....	83 48 52	263 40 16	4.22021	10.317
Anderson.....	144 10 13	324 05 07	4.22204	10.361
Mackay.....	322 01 08	142 09 20	4.42010	16.347

**COPPER BASIN RANGER STATION, CUSTER COUNTY, IDAHO. (Not occupied.)**

Small house painted white, used as ranger station. About 25 miles southwest of Mackay by wagon road across the hills and 1 mile west of Reed & Davis copper mine camp, in Copper Basin.

Station mark: Center of house.

[Latitude  $43^{\circ} 48' 28.5''$ . Longitude  $113^{\circ} 50' 04.1''$ .]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	Log. meters.	Miles.
Reed & Davis.....	124 04 43	.....	3.26715	1.150
Porphry.....	145 00 19	324 55 21	4.22285	10.380
Shelly.....	256 25 00	76 29 31	3.95473	5.599

**CRAWFORD, BLAINE COUNTY, IDAHO.**

On Appendicitis Hill, the highest point of the grassy ridges between Antelope Creek and the Lavas, 20 miles west and visible from Arco town, 8 miles south of Darlington post office, 3 miles east of E. S. Crawford's ranch on Antelope Creek, the easiest and shortest climb to station.

Station mark: A triangulation tablet set in solid rock centered under a large monument.

Reference mark: A chiseled cross on solid rock 16.1 feet northwest.

[Latitude 43° 43' 25.80". Longitude 113° 28' 21.45'']

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	Log. meters.	Miles.
Inferno.....	11 30 15	191 27 01	4.50194	19.737
Timbered Dome (tree).....	24 24 52	204 21 28	4.12713	8.327
Blizzard.....	32 17 58.74	212 09 54.03	4.4705007	18.359
Black Cap.....	58 05 32	237 59 48	4.11927	8.18
Scorpion.....	73 12 10.89	252 55 06.14	4.5408977	21.590
Smiley.....	84 30 27.01	264 16 29.47	4.4355977	16.941
Ante.....	110 15 41	290 04 13	4.37489	14.734
Shelly.....	119 26 16.39	299 15 46.33	4.3685909	14.519
Mackay.....	135 20 40.04	315 11 14.08	4.4143959	16.134
King.....	249 08 12.41	69 16 28.82	4.2350095	10.675
Arco.....	294 16 13.96	114 23 25.36	4.1860354	9.536
Arco School.....	305 50 30	125 57 33	4.22926	10.535
Hades.....	359 19 13.97	179 19 28.99	4.6164004	25.689

**CROOKS, BLAINE COUNTY, IDAHO.**

On Pine Mountain, a prominent rocky, partly grassed hill, with scattered trees near top, about 1.5 miles east of the main forks of Fish Creek. About 4 miles south and visible from Rawls ranch, Crook post office, 15 miles northeast of Carey, the nearest supply point. The old Crooks ranch on Fish Creek is at the north foot of hill. The ridge on which the hill is located divides Fish Creek and drainage to the Lava Beds.

Station mark: A chiseled cross on flat solid rock under a monument.

Reference marks: (1) A bench-mark tablet set in big boulder 4 feet east; (2) a trimmed lone spruce tree about center of hill 133 feet west.

[Latitude 43° 24' 51.0". Longitude 113° 47' 30.8'']

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	Log. meters.	Miles.
Buzz.....	85 02 04	.....	4.12860	8.355
Freedom.....	153 23 52	333 21 16	4.05507	7.064
Scorpion.....	162 50 37	342 46 47	4.40511	15.793
Hades.....	284 37 36	104 51 30	4.43546	16.936

**COPPER BASIN KNOB, CUSTER COUNTY, IDAHO. (Not occupied.)**

The highest rocky knob on the divide between the main head of the East Fork of Lost River and Lake Creek.

About 3 miles south and visible from Reed & Davis copper mine.

Mark: None.

[Latitude 43° 45' 21.9". Longitude 113° 50' 52.9'']

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	Log. meters.	Miles.
Porphyry.....	156 24 11	336 20 16	4.32668	13.183
Shelly.....	231 20 18	51 25 23	4.10078	7.839
Smiley.....	333 26 28	153 28 04	3.84400	4.339

**DIAMOND (THUMB), FREMONT COUNTY, IDAHO. (Not occupied.)**

On Diamond Peak, a high, very sharp peak on the main backbone of Little Lost River Range. About 10 miles southeast of Clyde post office and the same distance southwest of Kaufman post office.

Station mark: A tablet set in solid rock over which a large monument is centered.

Reference mark: A chiseled cross on solid rock 18 feet south.

[Latitude 44° 08' 30.13" (from north); 44° 08' 30.5" (from south). Longitude 113° 04' 54.78" (from north); 113° 04' 55.3" (from south).]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	Log. meters.	Miles.
Jumpoff (from south).....	2 37 17.00	182 36 16.00	4.63361	26.728
King (from south).....	20 53 38.00	200 45 40.00	4.63511	26.820
Shelly (from south).....	56 05 55.00	235 39 04.00	4.79501	38.758
E and W (from north).....	160 14 59.00	340 00 23.00	4.90979	50.482
Horse Prairie (from north).....	176 22 53.00	356 20 34.00	4.83811	42.802

**DICKEY PEAK, CUSTER COUNTY, IDAHO. (Not occupied.)**

The first prominent peak on the main backbone of the Lost River Range, west of the road from Dickey to the Pahsimeroi Valley and about 5 miles north of Dickey post office, Custer County. Station mark: Center of peak.

[Latitude 44° 13' 47.1". Longitude 113° 52' 57.8".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	Log. meters.	Miles.
Porphyry.....	9 45 14	189 42 16	4.52735	20.927
Jerry.....	43 44 06	223 34 43	4.41529	16.169
Anderson.....	72 43 24	252 37 45	4.07052	7.309
Spar.....	92 55 31	.....	4.30913	12.662

**DICKEY RED ROOF HOUSE, CUSTER COUNTY, IDAHO. (Not occupied.)**

Station mark: Center of Al West's residence at Dickey post office. Bench mark, elevation 6,345 feet, is about 25 feet southeast of house.

[Latitude 44° 08' 04.8". Longitude 113° 54' 12.6".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	Log. meters.	Miles.
Porphyry.....	10 07 14	190 05 08	4.36142	14.280
Jerry.....	63 13 22	243 04 52	4.26209	11.362
Anderson.....	126 26 56	306 22 11	4.07573	7.398

**E AND W, LEMHI COUNTY, IDAHO.**

On the high east-west red, rocky ridge on the Continental Divide about halfway between Lemhi and the Pittsburgh & Gilmore Railroad passes on the divide. About 0.5 mile south of the 1 A. P. of 417 M. State boundary between Idaho and Montana. Easily reached from Lemhi River on the west by going up Eighteen Mile Creek or from Nip and Tuck Creek, a tributary of Horse Prairie Creek on the east.

Station mark: A chiseled cross on rock set under a large monument.

Reference mark: Chiseled cross on perpendicular rock by small rock pile.

[Latitude 44° 49' 45.49". Longitude 113° 25' 44.52".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	Log. meters.	Miles.
Junction.....	9 09 55.00	189° 06 56.00	4.54822	21.957
Sal.....	122 34 36.24	302 17 06.05	4.5870729	24.012
Goldstone.....	160 20 44.60	340 14 32.08	4.5340485	21.281
Bloody Dick.....	193 07 20.50	13 11 52.61	4.5085499	23.009
J. C. B.....	224 52 15.02	44 59 40.97	4.2929420	12.198
Brenner.....	237 56 30.78	58 08 03.10	4.4043716	15.766
Horse Prairie.....	288 14 02.86	108 26 24.12	4.3867031	15.137
Pass.....	307 36 45.20	127 45 35.14	4.32030	12.991
Eighteen Mile Peak.....	320 48 07.00	141 06 23.00	4.73712	33.921
Thumb.....	340 00 23.00	160 14 59.00	4.90979	50.482
Finger.....	344 01 18.00	164 11 14.00	4.83559	42.554
Leadare Hill.....	351 34 11.86	171 36 18.12	4.43143	16.780
Timber Creek.....	357 02 27.73	177 03 28.56	4.56864	23.014
Ghost.....	358 56 03.00	178 56 15.00	4.29612	12.288

**EAST BUTTE, BINGHAM COUNTY, IDAHO.**

On the highest point of the east butte of the Twin Buttes north of Taber post office on the Mackay branch of the Oregon Short Line Railroad. Horses may be taken to the station from the east side. Nearest water is at William Dalzer's ranch, 7 miles southwest.

Station mark: Aluminum bench mark tablet set in solid rock under center of a 7-foot monument.

Reference mark: (1) A chiseled cross on solid rock 7.6 feet a little south of west; (2) a chiseled cross on solid rock 7.53 feet a little south of east.

[Latitude 43° 29' 51.94". Longitude 112° 39' 50.44".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	Log. meters.	Miles.
Big Butte.....	68 53 34.45	248 38 48.63	4.4923903	19.308
Middle Butte.....	82 57 07.23	262 54 04.94	3.7778843	3.726
Arco.....	110 20 22.05	289 54 05.70	4.7374676	33.948
Jumpoff.....	128 50 00.28	308 31 41.33	4.6603249	28.423
Saddle.....	154 34 34	334 22 37	4.73392	33.673

**EIGHTEEN MILE PEAK, LEMHI COUNTY, IDAHO. (Not occupied.)**

The northern of two peaks on the east side of the low pass separating the Lemhi Valley from Birch Creek valley, Little Lost River drainage, about 18 miles southeast of Leadore, Idaho. The peak is very prominent and is visible the entire length of the Lemhi River. No monument.

[Latitude 44° 26' 51.96". Longitude 112° 59' 44.18".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	Log. meters.	Miles.
Timber Creek.....	99 34 20.00	279 17 08.00	4.51879	20.518
E and W.....	141 06 23.00	320 48 07.00	4.73712	33.921

**ELEVEN MILES, CUSTER COUNTY, IDAHO.**

On the highest point of a black-rock knob at the north end of a timbered ridge between Eleven Mile Creek and the west head of McCay Creek. On the south side of the Yankee Fork of Salmon River. About 11 miles east of Custer and 13 miles east of Bonanza. About 5 miles west of the summit where the old Custer-Challis wagon road crosses the divide between the Yankee Fork and Mill Creek. Easily reached from the camping grounds on Eleven Mile Creek.

Station mark: A triangulation tablet in rock set under a large rock monument and tree signal.

Reference mark: A chiseled cross on solid rock 8.05 feet north.

[Latitude 44° 27' 50.06". Longitude 114° 33' 14.09".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	Log. meters.	Miles.
Mount Eustes.....	80 58 09.89	260 51 34.04	4.1022616	7.863
Ram.....	302 27 23.58	122 36 13.96	4.2985382	12.356

**EUSTES MOUNTAIN, CUSTER COUNTY, IDAHO.**

On a sharp, red, rocky peak, known as Mount Eustes, on a ridge between Jordan and Eight Mile creeks, tributaries of the Yankee Fork of Salmon River. One mile south of the wagon-road crossing of the main divide between the head of Jordan and

Mayfield creeks. One mile east and visible from the Sunbeam Mill. The Montana Boy and McFadden mines are located on the peak a short distance from the top. Wagon roads and trails are all over and around the peak. Easily reached from the Sunbeam Mill.

Station mark: A triangulation tablet in rock set under a large monument, which is also a mineral monument.

Reference mark: A chiseled cross on rock set 18.8 feet northwest.

[Latitude 44° 26' 45.32". Longitude 114° 42' 39.31'']

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	<i>Log. meters.</i>	<i>Miles.</i>
Twin.....	228 36 21.49	48 46 15.16	4.3960898	15.469
Summit Rock.....	252 34 07.22	72 43 08.02	4.2522856	11.108
Eleven Miles.....	260 51 34.04	80 58 09.89	4.1022616	7.863
Ram.....	286 24 48.82	106 40 14.63	4.4848503	18.976
Bonanza.....	350 34 53.29	170 35 44.78	3.9981961	6.188

#### FORNEY, LEMHI COUNTY, IDAHO.

On a bald ridge between Mayer and Panther creeks. About 2 miles east of the Cabin Creek ranger station and 4 miles southwest of Forney post office. Station is easily reached by going up any of the grassy ridges from the ranger station.

Station mark: A bronze tablet cemented into solid rock under a rock monument and tree signal.

Reference mark: A chiseled cross on solid rock 12.60 feet south.

[Latitude 44° 57' 08.23". Longitude 114° 19' 58.73'']

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	<i>Log. meters.</i>	<i>Miles.</i>
Black Mountain.....	3 53 02.83	183 52 35.93	4.0918756	7.678
Taylor.....	308 30 23.75	128 35 22.98	4.0749643	7.384

#### FREEDOM, BLAINE COUNTY, IDAHO.

On a prominent, round, rocky, partly grassed hill on divide between Trail and West Fork of Fish creeks. About 0.25 mile north of point where wagon road from Muldoon Creek to Fish Creek crosses the divide. Five miles west and a little north of Crooks post office and a schoolhouse on Fish Creek, 3 miles northwest of Ward's ranch and a schoolhouse on West Fork of Fish Creek, 20 miles north of Carey post office, the nearest store.

Station mark: A small chiseled cross on perpendicular rock centered under a large monument.

Reference mark: Aluminum bench mark tablet set in solid flat rock 11.7 feet north.

[Latitude 43° 30' 20.3". Longitude 113° 51' 17.4'']

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	<i>Log. meters.</i>	<i>Miles.</i>
Buzz.....	36 12 49	216 08 38	4.14758	8.728
Scorpion.....	170 17 01	350 15 47	4.15609	8.901
Blizzard.....	272 46 33	92 54 16	4.18023	9.410
Crooks.....	333 21 16	153 23 52	4.05567	7.064

#### GARFIELD, BLAINE COUNTY, IDAHO. (Not occupied.)

On a black-rock knob on divide at west head of Garfield Creek. About 5 miles northwest of junction of Garfield and Muldoon creeks.

Station mark: Tallest monument.

[Latitude 43° 36' 12.3". Longitude 113° 58' 54.5".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	<i>Log. meters.</i>	<i>Miles.</i>
Scorpion.....	247 23 00	67 27 01	3.92839	5.269
Blizzard.....	294 29 08	114 42 07	4.44566	17.338
Freedom.....	316 35 28	000 00 00	4.17442	9.285

**GARFIELD MOUNTAIN, IDAHO-MONTANA. (Not occupied.)**

Center of a big round rocky peak named Garfield Mountain on Continental Divide, 20 miles west of Monida, Idaho. No monument.

[Latitude 44° 31' 15.08". Longitude 112° 37' 12.47".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	<i>Log. meters.</i>	<i>Miles.</i>
Timber Creek.....	87 47 12.00	267 14 12.00	4.79568	38.818
Horse Prairie.....	123 10 21.00	302 48 34.00	4.68907	30.368

**GHOST, LEMHI COUNTY, IDAHO.**

On a low isolated hill on the south side of Lemhi Valley and the west side of Timber Creek. About 6 miles southwest and visible from Leadore, Idaho: Easily reached from the ranch roads up the west side of Timber Creek.

Station mark: A chiseled cross under a large monument.

Reference mark: A chiseled cross on rock 14.20 feet east.

[Latitude 44° 39' 04.98". Longitude 113° 25' 27.84".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	<i>Log. meters.</i>	<i>Miles.</i>
E and W.....	178 56 15.00	358 56 03.00	4.29612	12.288
Horse Prairie.....	241 55 16.00	62 07 24.00	4.41176	16.037

**GOLDSTONE, LEMHI COUNTY, IDAHO.**

On the last south high rocky peak on the Continental Divide Range. About 1,000 feet southwest of State-line boundary post 3 A. P. 468 M. On the headwaters of Kenny Creek, about 2 miles south of Goldstone mine on Pratt Creek. A good trail comes up Pratt Creek from Salmon River, and a wagon road comes into the mine from the Montana side. The station is easily reached by trail from the mine or by coming up the ridges from the ranches on Kenny Creek.

Station mark: A triangulation tablet cemented in a rock set under large monument.

Reference mark: A chiseled cross on solid rock 12.90 feet south.

[Latitude 45° 07' 10.00". Longitude 113° 34' 31.58".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	<i>Log. meters.</i>	<i>Miles.</i>
Sal.....	61 21 09.08	241 09 49.35	4.3794112	14.885
Mill.....	71 32 15.00	251 22 51.00	4.26426	11.419
Baldy.....	94 59 45.10	274 41 20.59	4.5337146	21.236
Graveyard.....	100 27 52.00	280 15 19.00	4.37301	14.668
E and W.....	340 14 32.08	160 20 44.60	4.5346485	21.281

**GRAVEYARD, LEMHI COUNTY, IDAHO.**

On a low hill, the first or north hill on the divide between the forks of Lemhi and Salmon rivers. About 0.5 mile southeast of Salmon City. The cemetery is at the west foot of the hill.

Station mark: A triangulation tablet set in solid rock under a rock monument.

Reference mark: A chiseled cross on a big flat rock northwest of station.

[Latitude 45° 09' 27.51". Longitude 113° 52' 14.31".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	<i>Log. meters.</i>	<i>Miles.</i>
Goldstone.....	280 15 19.00	100 27 52.00	4.37301	14.668
Sal.....	351 53 18.00	171 54 31.00	4.20204	9.895

**GROUSE, CUSTER COUNTY, IDAHO.**

On a grassy hill on the main divide between Salmon and Pahsimeroi rivers. It is the beginning of the Little Lost River Mountain Range. About 10 miles northwest of Challis and the same distance southwest of May. The trail from Jack Adams's ranch on Salmon River up Dodge Gulch to the Pahsimeroi Valley crosses the ridge one-quarter of a mile north of hill. Good spring and grass at the head of Dodge Gulch. Challis and May are both visible.

Station mark: Triangulation tablet set in solid rock under large rock monument.

Reference mark: A chiseled cross on solid rock 16.8 feet east.

[Latitude 44° 33' 56.96." Longitude 114° 05' 38.93".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	<i>Log. meters.</i>	<i>Miles.</i>
Spar.....	5 26 59.76	185 25 10.46	4.5622512	22.678
Lone Pine.....	13 47 01.00	193 43 51.00	4.40146	15.661
Redwings.....	20 54 54.96	200 43 47.67	4.7748586	37.001
Ram.....	42 06 03.33	221 55 34.76	4.4718106	18.415
Bay Horse.....	53 22 08.00	233 11 05.00	4.41569	16.182
Challis.....	68 03 49.00	247 56 43.00	4.16020	8.986
Twin.....	95 59 35.22	275 43 31.01	4.4838014	18.930
Taylor.....	164 56 00.42	344 50 53.59	4.5660021	22.875
Baldy.....	185 58 56.13	6 02 34.04	4.8113331	40.243
Sal.....	201 39 16.65	21 49 55.82	4.7310495	33.450
Lem.....	217 03 02	37 12 40	4.47729	18.650
Hi Peak.....	236 58 12	57 09 16	4.39484	15.424
Pahsimeroi.....	284 09 06	104 33 05	4.67001	29.064

**HADES, BLAINE COUNTY, IDAHO.**

On an old crater partly grassed, which from a distance appears as a round hill. It is the last big crater at the southeast end of the chain of craters that extend out in the Lavas from the point of the high divide between Lava and Cottonwood creeks. About 16 miles southeast of Martins post office and ranch, the outfitting point. Eight miles southeast of the Bear Trap at the end of the road where all the craters of a comparative recent age are clustered. From Martin's ranch follow the Arco-Hailey road south about 3 miles and take the first left-hand road, built by Mr. Martin as a wood road, now used by autos for sight-seeing. A short distance beyond the Bear Trap and near the end of the road on the south slope of a black cinder crater a small monument on the edge of lava wall marks the beginning of the trail. For the first mile this trail is across the new lavas and is very rough, but well marked by small rock piles. The route then is southeast, leaving the big red-topped partly timbered (Aspen tree) crater to the right or west and the horseshoe crater to the left or north. About 1 mile southeast of the horseshoe crater a big monument and a lone pine tree mark the only



water, which is an ice cave in the crevice of the lavas. Grass sufficient for horses about a mile farther on the next two craters. The station is visible and about 4 miles southeast from water hole.

Station mark: A triangulation tablet set in placed rock centered under a large monument.

Reference mark: Chiseled cross on placed rock 11.2 feet northwest.

[Latitude 43° 21' 06.28". Longitude 113° 27' 59.68".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	<i>Log. meters.</i>	<i>Miles.</i>
Buzz.....	98 24 56	278 04 55	4.60395	24.963
Crooks.....	104 51 30	284 37 36	4.43546	16.936
Blizzard.....	135 09 27.23	315 01 09.21	4.3632852	14.343
Crawford.....	179 19 28.94	359 19 13.96	4.6164004	25.689
Arco.....	201 04 49.13	21 11 44.08	4.5745275	23.328
Big Butte.....	261 59 47.29	82 18 06.88	4.5609470	22.610

#### HERD, CUSTER COUNTY, IDAHO.

On a high grassy knob on the main divide between Big Lost River and East Fork of Salmon River. Near the head of the left-hand fork of Herd Creek. About 10 miles southeast of Stevens ranch on Herd Creek. Seven miles northwest of the mouth of East Fork of Big Lost River. Fifteen miles southwest of Chilly. Easily reached from Herd Creek or Big Lost River.

Station mark: A chiseled cross on solid rock under a large monument.

Reference mark: A chiseled cross on solid rock 8 feet north.

[Latitude 43° 59' 11.63". Longitude 114° 13' 30.64".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	<i>Log. meters.</i>	<i>Miles.</i>
Redwings.....	129 00 40.12	308 55 04.13	4.14135	8.604
Jerry.....	229 03 00.59	49 07 55.71	4.09741	7.777

#### HI PEAK, LEMHI COUNTY, IDAHO. (Not occupied.)

On the highest peak in the Lemhi Range between the Hayden Basin and Pahsimeroi Valley. Ten miles north of May, Idaho.

Station mark: Center of big monument.

[Latitude 44° 41' 14.22". Longitude 113° 49' 53.89".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	<i>Log. meters.</i>	<i>Miles.</i>
Grouse.....	57 09 15.55	236 58 11.65	4.39484	15.424
Sal.....	178 42 04.48	358 41 37.82	4.56247	22.689

#### HORSE PRAIRIE, LEMHI COUNTY, IDAHO-BEAVERHEAD COUNTY, MONT.

About 20 miles northeast of Junction and Leadore, Idaho, on a high hill at the head of East Fork of Canyon Creek on the Continental Divide boundary line between Montana and Idaho. Near Montana-Idaho State boundary post 537.12 M. Good wagon road to Cruikshank's ranch on Canyon Creek, then a long gradual climb up ridge between two forks of creek about 1 mile east of ranch. The monument is visible the entire length of the creek.

Station mark: A chiseled cross on solid rock under a large monument.

Reference mark: The iron State boundary post marked 537.12, 52.40 feet south.

# 194 TRIANGULATION AND PRIMARY TRAVERSE, 1913-1915.

[Latitude 44° 45' 37.20". Longitude 113° 08' 12.48".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	Log. meters.	Miles.
Finger.....	4 24 58.00	184 22 36.00	4.76622	36.272
Timber Creek.....	36 03 58.00	215 52 40.00	4.55911	22.514
Pahsimeroi.....	42 56 40.00	222 40 21.00	4.65580	28.129
Junction.....	46 44 37.00	226 29 19.00	4.59806	24.627
Leadore Hill.....	45 20 24.12	225 10 11.00	4.43234	16.815
Ghost.....	62 07 24.00	241 55 16.00	4.41176	16.037
E and W.....	108 26 24.12	288 14 02.86	4.3867031	15.137
Bloody Dick.....	161 34 17.52	341 26 26.09	4.6637226	28.647
Garfield Mountain.....	302 48 34.00	123 10 21.00	4.68907	30.368
Thumb.....	356 20 34.00	176 22 53.00	4.83811	42.802

## HOWE, BLAINE COUNTY, IDAHO.

On the high grassy ridge between Argo Pass and the Lavas. About 16 miles northeast of Arco and 6 miles southwest of Howe Post Office. Spring on the wagon road on the north slope of Argo Pass is the nearest water. Best route is up the long canyon on the south side of the Pass.

Station mark: Bench mark tablet set in solid rock over which a big monument is centered.

Reference mark: A chiseled cross on solid rock 8.48 feet southeast.

[Latitude 43° 42' 48.5". Longitude 113° 05' 57.2".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	Log. meters.	Miles.
Arco.....	72 16 38	252 08 21	4.22866	10.520
King.....	117 24 26	297 17 13	4.19810	9.804
Jumpoff.....	172 50 02	352 49 44	3.66814	2.894

## INFERNO, BLAINE COUNTY, IDAHO.

On the highest point of a dome-shaped black cinder crater near the "Bear Trap" at the end of the wagon road. Eight miles southeast of Martin post office and ranch the nearest water. The crater 0.25 mile northwest is a few feet higher and has grass and scattering trees on northwest slope. The crater is easily recognized from the trimmed double tree that will appear as a single tree from an easterly or westerly direction. Wagon and automobile can be taken almost to the top.

Station mark: A 10-inch old drill driven in red solid cinder on top of the black cinder.

Reference mark: The base of the eastern of two trimmed trees slightly on the east slope of the crater 149 feet southeast.

[Latitude 43° 26' 37.1". Longitude 113° 33' 03.2".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	Log. meters.	Miles.
Blizzard.....	122 58 31	302 53 20	4.05228	7.009
Crawford.....	191 27 01	11 30 15	4.50194	19.736
Arco.....	219 15 52	39 26 16	4.50622	19.933

## INVISIBLE, CUSTER COUNTY, IDAHO. (Not occupied.)

On the highest point of a big ridge-shaped mountain at the south end of the high mountains of the Lost River Range just north of the head of Pass Creek. Seven miles northeast and visible from Mackay and about 5 miles west of Pass Creek ranger station.

Can only be reached from the south or Mackay side and is very rough and steep. Horses can be taken to the top in six hours by picking a route amongst the big boulders.

Station mark: Chiseled cross on placed rock centered under a large monument.

Reference mark: A hole drilled for tablet in solid rock 16 feet south.

[Latitude 43° 58' 00.5". Longitude 113° 30' 51.6'']

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	<i>Log. meters.</i>	<i>Miles.</i>
Shelly.....	47 37 18	227 28 04	4.36208	14.303
Mackay.....	60 11 53	240 04 10	4.23476	10.670
Crawford.....	352 54 16	172 56 00	4.43462	16.904

#### JERRY, CUSTER COUNTY, IDAHO.

On the highest grassy hill on the main divide between the waters of East Fork Salmon River and Big Lost River. At the heads of Lake Creek, a tributary of Herd Creek, Salmon River, and Rogers Canyon, Lost River. Three miles east of Stevens Lake and 8 miles east of Stevens ranch on Herd Creek, 5 miles southwest of Peterson's ranch at the mouth of Rogers Canyon, 12 miles west and visible from Chilly post office. Easiest reached from Stevens Lake and Peterson's ranch. At 900 feet, by steppings southwest is iron section corner post marked "O. C. T. 9 N., sec. 33, secs. 4 and 5, T. 8 N., R. 20 E." About 90 feet north of iron post is section-corner stone marked with four scratches on east. In sighting the iron-post section corner the sight also passes over quarter section corner, small iron post, between secs. 5 and 6.

Station mark: A chiseled cross on solid rock over which a monument is centered.

Reference marks: (1) A chiseled cross on solid rock 8.85 feet south; (2) iron post, about 900 feet; true azimuth 64° 02' 25".

[Latitude 44° 03' 37.16" (from north); 44° 03' 37.25" (from south). Longitude 114° 06' 25.97" (from north); 114° 06' 25.97" (from south).]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	<i>Log. meters.</i>	<i>Miles.</i>
Herd (from north).....	49 07 56	229 03 01	4.09741	7.777
Potaman (from north).....	127 47 51.74	307 35 47.70	4.4654485	18.147
Ram (from north).....	151 09 05.94	330 59 12.98	4.5912949	24.246
Ram (from south).....	151 09 01.75	.....	4.5913160	24.247
Spar (from south).....	173 02 17.66	.....	4.3006728	12.417
Anderson (from south).....	203 38 30.38	23 42 00.73	4.2234690	10.395
Mackay (from south).....	299 56 45.29	120 13 43.85	4.5773607	23.481
Porphyry (from south).....	319 21 57.32	139 28 20.99	4.2769062	11.756
Redwings (from south).....	91 31 54.11	271 21 22.57	4.3057368	12.503

#### JUMPOFF, BLAINE COUNTY, IDAHO.

On the highest of several grassy hills on the ridges between Argo Pass and the Lavas. Ten miles a little north of east of Arco City and about 4 miles west of Howe post office. Water and feed at Howe post office and the spring on the north side of Argo Pass. Can be reached with horses from either east or west side.

Station mark: Aluminum bench-mark tablet set in solid rock over which a large monument is centered.

Reference mark: A chiseled cross on solid rock 5.7 feet north.

[Latitude 43° 45' 18.27". Longitude 113° 06' 23.20'".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	Log. meters.	Miles.
Arco.....	57 49 54.50	237 41 55.08	4.2639317	11.410
King.....	101 07 43.68	281 00 48.37	4.1362120	8.503
Bell.....	172 37 15	352 33 38	4.73201	33.524
Diamond.....	182 36 16	2 37 17	4.63361	26.728
Saddle.....	211 06 21	31 12 42	4.37533	14.746
East Butte.....	308 31 41.33	128 50 00.28	4.6603249	28.423
Middle Butte.....	314 26 25.89	134 41 42.04	4.6210830	25.968
Big Butte.....	350 14 06.88	170 17 36.87	4.6066291	25.118
Howe.....	352 49 44	172 50 02	3.66814	2.894

**JUNCTION, LEMHI COUNTY, IDAHO.**

On a mountain in the Lemhi Range on the west side of Timber Creek and near its head. About 15 miles southwest of Leadore, Idaho. About 1 mile east of a very prominent yellow peak. Easily reached from the Timber Creek trail.

Station mark: A chiseled cross under a large monument.

Reference mark: A chiseled cross 12.55 feet north.

[Latitude 44° 30' 55.26". Longitude 113° 29' 59.37'".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	Log. meters.	Miles.
E and W.....	189 06 56.00	9 09 55.00	4.54822	21.957
Horse Prairie.....	226 29 19.00	46 44 37.00	4.59806	24.627

**KING, BLAINE COUNTY, IDAHO.**

On the northern of two high peaks on King Mountain between Big Lost and Little Lost rivers, about 8 miles due north of Arco City, 25 miles southeast and visible from Mackay City. Can only be reached with horses from the east side by leaving wagon road near Argo Pass.

Station mark: A triangulation tablet set in placed rock centered under a large monument.

Reference marks: (1) A chiseled cross on solid rock 52.4 feet north; (2) a chiseled cross on solid rock 16.15 feet east.

[Latitude 43° 46' 43.41". Longitude 113° 16' 23.60'".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	Log. meters.	Miles.
Arco.....	9 33 35.10	189 32 30.56	4.1002561	7.827
Crawford.....	69 16 28.82	249 08 12.41	4.2350095	10.675
Shelly.....	98 31 23.38	278 12 36.14	4.5657993	22.864
Mackay.....	109 56 29.76	289 38 46.36	4.5618031	22.654
Sunset.....	160 40 35	340 36 35	4.36698	14.407
Bell.....	187 09 51	7 15 11	4.70993	31.863
Diamond.....	200 45 40	20 53 38	4.63511	26.821
Saddle.....	235 20 53	55 34 10	4.49390	19.375
Jumpoff.....	281 00 48.37	101 07 43.68	4.1362120	8.503
Howe.....	297 17 13	177 24 26	4.19810	9.804

**KLUG, CUSTER COUNTY, IDAHO.**

On a high timbered hill on the divide between Johns Gulch and Birch Creek. About 5 miles southwest and in view of Challis. Three miles south of Alexander Klug's ranch on Gordon Creek at the mouth of Johns Creek, 2 miles west of Challis. Good route up Johns Creek to station. The point commands a good view of the whole of Challis Valley.

Station mark: A chiseled cross on a large rock under monument and tree signal.

Reference mark: A chiseled cross on solid rock 18.10 feet east.

[Latitude 44° 27' 41.78". Longitude 114° 16' 21.61".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	<i>Log. meters.</i>	<i>Miles.</i>
Twin.....	132 22 38.00	312 14 05.00	4.33897	13.562
Grouse.....	230 43 43.00	50 51 13.00	4.26291	11.383

**LEADORE HILL, LEMHI COUNTY, IDAHO.**

On the highest point of a rocky-topped timbered low hill on the west side of Timber Creek. About 5 miles south and visible from Leadore City. There is a large warm spring at the northeast foot of the hill.

Station mark: A triangulation tablet cemented in solid rock.

Reference mark: A chiseled cross on solid rock 11.5 feet south.

[Latitude 44° 35' 20.07". Longitude 113° 22' 45.06".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	<i>Log. meters.</i>	<i>Miles.</i>
E and W.....	171 36 18.12	351 34 11.86	4.43143	16.780
Horse Prairie.....	225 10 10.61	45 20 24.12	4.43234	16.815

**LEATHERMAN, CUSTER COUNTY, IDAHO. (Not occupied.)**

The first high peak on main backbone of the Lost River Range east of Leatherman Pass about 7 miles east of Chilly and 20 miles a little west of north from Mackay City.

Station mark: Summit of peak.

[Latitude 44° 04' 57.0". Longitude 113° 43' 56.3".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	<i>Log. meters.</i>	<i>Miles.</i>
Porphyry.....	46 37 14	226 28 00	4.38862	15.204
Jerry.....	85 26 48	265 11 09	4.47907	18.732
Mackay.....	353 05 25	173 07 00	4.33366	13.397

**LEM, LEMHI COUNTY, IDAHO. (Not occupied.)**

On a high peak in the Lemhi Range near the head of Poison Creek, west of Hayden basin.

Station mark: Center of big monument.

[Latitude 44° 46' 52.20". Longitude 113° 51' 56.36".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	<i>Log. meters.</i>	<i>Miles.</i>
Grouse.....	37 12 40.00	217 03 01.65	4.47729	18.651
Sal.....	184 04 00.06	4 04 59.82	4.41728	16.242

**LONE PINE, CUSTER COUNTY, IDAHO. (Not occupied.)**

On the highest point of the big prominent lone peak on the east side of Salmon River, about 10 miles southeast of Challis. The peak is known to the old settlers as Lone Pine and is visible from Challis and the whole valley.

Station mark: Center of big monument.

[Latitude 44° 20' 43.87". Longitude 114° 10' 10.02".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	Log. meters.	Miles.
Twin.....	138 39 11.00	318 26 18.00	4.56600	22.874
Grouse.....	193 43 51.00	13 47 01.00	4.40146	15.661

**LOW, LEMHI COUNTY, IDAHO. (Not occupied.)**

On the only low rock hill in that vicinity, about 10 or 12 miles northeast of Forney. The hill is known to some as Swan Peak.

Station mark: Center of monument.

[Latitude 45° 00' 53.85". Longitude 114° 11' 29.18".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	Log. meters.	Miles.
Taylor.....	7 27 52.00	137 26 51.00	4.16115	9.005
Red Rock.....	85 23 07.00	265 13 02.00	4.27401	11.678

**MCCALEB, CUSTER COUNTY, IDAHO. (Not occupied.)**

On Mount McCaleb, a prominent locally known peak on end of ridge about 1 mile south of main backbone of the Lost River Range. About 3 miles north of and visible from Mackay.

Station mark: Small monument.

[Latitude 43° 59' 32.8". Longitude 113° 35' 48.1".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	Log. meters.	Miles.
Mackay.....	36 00 22	215 56 05	4.14877	8.751
Porphyry.....	76 43 31	256 29 16	4.46927	18.307
Jerry.....	100 37 08	280 16 23	4.61931	25.862
Crawford.....	341 28 37	161 33 46	4.49784	19.553

**MCGOWAN, CUSTER COUNTY, IDAHO.**

On the north end of the only rock ridge between the two main forks of Basin Creek and about half a mile south of the divide between Basin Creek and the West Fork of the Yankee Fork, about 8 miles west of Bonanza and 12 miles northeast of Stanley basin. The old hay trail from Stanley basin to Custer via Bonanza passes along the east and south foot of the ridge.

Station mark: The center of a rock monument.

Reference mark: A chiseled cross on solid rock several inches below surface under a small rock pile 6.60 feet north. This is the point occupied by instrument.

[Latitude 44° 20' 27.37". Longitude 114° 50' 35.12".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	Log. meters.	Miles.
Trap.....	216 54 30.57	37 02 58.71	4.4262530	16.581
Ram.....	265 33 38.25	85 54 35.84	4.6015083	24.823

**McGUIRE, LEMHI COUNTY, IDAHO. (Not occupied.)**

On the highest of the very rough peaks, sometimes called the "Big Horn Crags," 12 miles southeast of the junction of the Middle Fork of Salmon River with the main Salmon River, about 15 miles southwest of Shoup, Idaho. The divide trail from the Forney-Yellow Jacket road at Red Rock passes down Clear Creek 6 miles east of station. Peak very difficult to reach.

Station mark: Center of big monument.

[Latitude 45° 10' 29.26". Longitude 114° 36' 04.73".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	Log. meters.	Miles.
Middle Fork.....	10 07 39.94	190 05 23.91	4.37922	14.879
Baldy.....	273 47 50.14	94 13 03.84	4.66968	29.042

**MACKAY, CUSTER COUNTY, IDAHO.**

On the northeast rocky knob of the north peak above the Mackay mine. About 4 miles south and visible from Mackay City. Easily reached with animals from Mackay by taking the main road to Mackay mine and following all left-hand roads which run in the creek bottom. At the end of the road go up a snow slide on the north side of peak. About a 3-hour ride from Mackay.

Station mark: A tablet set in solid rock over which a large monument is centered.

Reference mark: A chiseled cross on solid rock 16.4 feet northeast.

[Latitude 43° 53' 23.45". Longitude 113° 41' 59.04".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	Log. meters.	Miles.
Shelly.....	16 34 18.94	196 33 14.42	3.8330279	4.533
Porphyry.....	102 43 28.08	282 32 53.79	4.3204384	12.995
Anderson.....	142 59 35.09	322 46 05.29	4.6331939	26.702
McCaleb.....	215 56 05	36 00 22	4.14877	8.752
Invisible.....	240 04 10	60 11 53	4.23476	10.669
King.....	289 38 46.36	109 56 29.76	4.5618031	22.654
Crawford.....	315 11 14.08	135 20 40.04	4.4143959	16.134

**MARTIN, BLAINE COUNTY, IDAHO. (From two stations only; no check on this position.)**

On a round partly grassed lava hill at northeast foot of grassy divide, 0.25 mile southeast and visible from Martin's ranch and post office. The Arco-Hailey wagon road passes along the northeast foot of the hill.

Station mark: Aluminum bench mark tablet under center of monument.

Reference marks: (1) Cross on flat lava rock 35.7 feet east; (2) corner of secs. 11, 12, 13, and 14, T. 2 N., R. 24 E., is 1,500 feet distant; true azimuth 289° 10' 08".

[Latitude 43° 30' 41.0". Longitude 113° 33' 35.0".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	Log. meters.	Miles.
Blizzard.....	81 00 13	260 55 45	3.94707	5.501
Arco.....	230 31 06	50 41 53	4.43503	16.919

**MIDDLE BUTTE, BINGHAM COUNTY, IDAHO.**

United States Coast and Geodetic Survey station on the highest part near north end of Middle Butte, which is the west butte of Twin Buttes. This butte is located on north side of the Mackay Branch of the Oregon Short Line Railroad. Can be

reached from either the wells at Tabor post office and railroad station, 15 miles southeast, or Delzers Bros. deep well and ranch, 5 miles southwest. Horses may be taken one-third way up by ascending from north side.

Station mark: A bronze tablet set by the United States Coast and Geodetic Survey.

Reference marks: (1) A bronze reference tablet set by the United States Coast and Geodetic Survey 13.7 feet west; (2) a Geological Survey bench mark tablet set in solid rock under center of large monument 9 feet north.

[Latitude  $43^{\circ} 29' 28.01''$ . Longitude  $112^{\circ} 44' 15.28''$ .]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	Log. meters.	Miles.
Big Butte.....	65 32 29.48	245 20 45.83	4.4030997	15.720
Arco.....	113 29 25.57	293 06 11.91	4.6936166	30.688
Jumpoff.....	134 41 42.04	314 26 25.89	4.6210830	25.968
East Butte.....	262 54 04.94	82 57 07.23	3.7778843	3.726

#### MIDDLE FORK, LEMHI COUNTY, IDAHO.

A big rock knob on a timbered hill on main divide at the head of Warm Springs Creek to the west and Camp Creek to the east. About 12 miles west of Yellow Jacket and 5 miles east of the Mormon ranch on Middle Fork of Salmon River, 6 miles northeast of the junction of the Yellow Jacket and Camas creeks. The trail from Yellow Jacket to the Mormon ranch crosses the divide about a mile to the south.

Station mark: A triangulation tablet under a monument.

Reference mark: A chiseled cross on solid rock 7.9 feet south.

[Latitude  $44^{\circ} 57' 45.62''$ . Longitude  $114^{\circ} 39' 16.85''$ .]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	Log. meters.	Miles.
Sleeping Deer.....	7 26 00.99	187 24 30.01	4.3394058	13.576
Bee Hive.....	195 53 33.85	15 57 59.73	4.4758179	18.586
Quartzite.....	236 24 34.00	56 33 25.00	4.29496	12.254
Baldy.....	248 01 38.91	68 29 05.84	4.7389049	34.061
Red Rock.....	256 25 33.07	76 35 07.33	4.2625318	11.373
Taylor.....	283 42 18.83	104 00 55.98	4.5530660	22.203
Black Mountain.....	298 38 30.60	118 51 41.22	4.4475912	17.416

#### M. P. 12, LEMHI COUNTY, IDAHO.

On the northeast end of a burnt flat hill with scattering young pine. On the main divide between the waters of Middle Fork of Salmon and Salmon River. Deer Creek to the north and Yellow Jacket Creek to the south. Milepost 12 on the divide trail from the Forney-Yellow Jacket road crossing the main divide to Clear Creek via Red Rock and Cathedral is on the east slope of the hill about one-fourth mile from station. The station commands a good view but was not placed on the highest point of the flat top because it required too much cutting to sight the different points.

Station mark: A chiseled cross on rock set under a rock monument.

Reference mark: A triangulation tablet in solid rock 6.93 feet south.

[Latitude  $45^{\circ} 05' 44.50''$ . Longitude  $114^{\circ} 30' 30.27''$ .]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	Log. meters.	Miles.
Baldy.....	261 49 50.00	82 11 06.00	4.59916	24.689
Red Rock.....	329 13 21.00	149 16 43.00	4.08747	7.600



**MILL, LEMHI COUNTY, IDAHO.**

On a low grassy hill south of Mill Creek about 10 miles southeast of Salmon City and 4 miles west of Baker post office on Lemhi River. Easily reached from Salmon by the Warm Springs road past the graveyard or from the Lemhi River. On the divide between Mulkey and Withington creeks.

Station mark: A triangulation tablet cemented into a large boulder.

Reference mark: A chiseled cross on rock 36 feet south.

[Latitude 45° 04' 00.70". Longitude 113° 47' 48.37".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	<i>Log. meters.</i>	<i>Miles.</i>
Baldy.....	117 43 25.00	297 35 26.00	4.27413	11.681
Goldstone.....	251 22 51.00	71 32 15.00	4.26426	11.419

**PAHSIMEROI, LEMHI COUNTY, IDAHO.**

On a high rocky peak—main divide Lemhi Range—at the head of Timber Creek, a tributary of Lemhi River to the north, a tributary of Little Lost River to the east, and a tributary of the Pahsimeroi River to the west. The trail up Timber Creek leads to foot of hill but from here to top of peak is a long rocky climb. The hill on the divide half a mile northwest is the highest.

Station mark: A chiseled cross on solid rock under a rock monument.

Reference mark: A chiseled cross on solid rock.

[Latitude 44° 27' 41.29". Longitude 113° 31' 27.61".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	<i>Log. meters.</i>	<i>Miles.</i>
Ram.....	81 12 30	260 38 06	4.82002	41.055
Grouse.....	104 33 05	284 09 06	4.67001	29.064
E and W.....	190 26 49.00	10 30 50.00	4.61876	25.829
Horse Prairie.....	222 40 21.00	42 56 40.00	4.65580	28.129

**PASS, LEMHI COUNTY, IDAHO.**

On a high grassy hill about 10 miles northeast and visible from Leadore, Idaho. Best reached by following wagon road up Canyon Creek to the forks at first ranch, below creek water tank G. & P. Railroad, thence one-half mile up the east fork of Canyon Creek before going up the long grassy ridge to the south.

Station mark: Chiseled cross on slanting solid limestone under a large monument.

Reference mark: Triangulation tablet set in solid rock 13.90 feet south.

[Latitude 44° 42' 51.44". Longitude 113° 13' 12.07".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	<i>Log. meters.</i>	<i>Miles.</i>
E and W.....	127 45 35.14	307 36 45.20	4.32030	12.991
J. C. B.....	174 20 29.44	354 19 04.41	4.42829	16.659

**PION, CUSTER-BLAINE COUNTY LINE, IDAHO. (Not occupied.)**

On the west of the last two big dome-shaped mountains on the divide between Antelope and Muldoon creeks about 15 miles northwest of Grouse post office and 3 miles east of the pass through which the trail goes from East Fork of Big Lost River basin to Muldoon Creek.

Station mark: Small monument.

[Latitude 43° 37' 31.4". Longitude 113° 50' 36.0".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	Log. meters.	Miles.
Scorpion.....	103 37 56	283 36 20	3.53044	2.137
Smiley.....	198 21 06	18 22 31	3.94039	5.417
Blizzard.....	314 41 02	134 48 17	4.30030	12.408

**PORPHYRY, CUSTER COUNTY, IDAHO.**

On a reddish rocky dome-shaped hill on grassy ridge  $\frac{1}{2}$  mile south of main divide between East Fork of Lost River and Big Lost River. About 12 miles south and visible from Chilly post office. About 4 miles east of Johnson ranch on the East Fork. The hill is very prominent and can be seen from the entire Copper Basin valley and from the Lost River valley in the vicinity of Dickey and Chilly. Good camping ground at head of gulches near station.

Station mark: A tablet set in placed rock centered under large monument.

Reference mark: A chiseled cross on solid rock 11.2 feet north.

[Latitude 43° 55' 51.69". Longitude 113° 57' 13.62".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	Log. meters.	Miles.
Redwings.....	114 42 44.00	294 25 49.51	4.5530465	22.233
Jerry.....	139 28 20.99	319 21 57.32	4.2769062	11.756
Anderson.....	169 23 59.89	349 21 05.85	4.4801275	18.771
Dickey Peak.....	189 42 16	09 45 14	4.52735	20.927
Dickey red roofed house.....	190 05 08	10 07 14	4.36142	14.28
Beauty.....	211 06 44	31 13 58	4.42918	16.69
Leatherman.....	226 28 00	46 37 14	4.38862	15.20
Mackay.....	282 32 53.79	102 43 28.08	4.3204384	12.995
Shelly.....	302 09 45.42	122 19 14.81	4.3361139	13.473
Copper Basin ranger station.....	324 55 21	145 00 19	4.22285	10.380
Reed & Davis.....	327 27 06	147 31 16	4.17590	9.316
Smiley.....	335 35 55.40	155 41 55.53	4.4501498	17.519
Scorpion.....	350 27 53.26	170 30 45.10	4.5264167	20.882

**POTAMAN, CUSTER COUNTY, IDAHO.**

On the highest rock knob on the narrow rock ridge on top of the grassy divide between Sullivan and Spud creeks to the north, and Smith Lake Creek to the south and east. Two miles south of Bradshaw's ranch on Spud Creek. This is the only ranch on Spud Creek and is about 1 mile south of Salmon River. Three miles south-east of Clayton post office and mill on Salmon River. It is the highest peak in the vicinity and commands a splendid view.

Station mark: A chiseled cross on a slanting solid rock under a rock monument and tree signal.

Reference mark: A triangulation tablet in solid rock 9.45 feet north.

[Latitude 44° 13' 15.75". Longitude 114° 23' 45.61".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	Log. meters.	Miles.
Trap.....	150 37 40.17	330 27 22.10	4.5996871	24.719
Ram.....	194 25 41.99	14 27 54.21	4.2259548	10.455
Jerry.....	307 35 47.70	127 47 51.74	4.4654485	18.147

**PROMINENT, CUSTER COUNTY, IDAHO.**

On the highest point of Pinyon Mountain on the divide between the waters of Big Loon and Rapid creeks. At the head of Canyon Creek to the east and Difficult Creek to the west. Two miles west of Ivers, Lost Pocket Mine, 6 miles east of Casto,

and 5 miles northwest of Loon Creek Center ranger station. Easily reached by road and trail from Ivers. It is a high large white-rock peak, timbered on west, and very prominent.

Station mark: A triangulation tablet under a large rock monument with tree in center.

Reference mark: A chiseled cross 7.45 feet south; tall flagpole in center of small monument 59.1 feet west.

[Latitude 44° 34' 12.70". Longitude 114° 54' 57.62".]

To station—	Azimuth.	Back azimuth.	Distance.	
			<i>Log. meters.</i>	<i>Miles.</i>
Thompson Peak.....	18 23 22.00	198 16 27.00	4.62109	25.968
Ramey.....	183 07 27.00	268 09 38.00	4.46266	18.030
Sleeping Deer.....	219 06 15.23	39 15 46.25	4.4520672	17.596
Sheldon.....	242 45 26.00	63 00 24.00	4.50032	19.664
Trap.....	280 41 47.32	100 53 20.66	4.3464774	13.798
The General.....	316 34 43.15	136 39 30.63	4.1199010	8.189

#### PUDDIN, LEMHI COUNTY, IDAHO. (Not occupied.)

On a high rough rock peak about 3 miles south of Mount McGuire. Puddin and Wilson creeks head around the peak. About 15 miles southeast of the junction of the Middle Fork with main Salmon River. Hard to reach but best approached from the east by leaving the divide trail from Forney to Clear Creek near the Cathedral Rock 17-mile post.

Station mark: Center of big monument.

[Latitude 45° 06' 46.25". Longitude 114° 37' 42.05".]

To station—	Azimuth.	Back azimuth.	Distance.	
			<i>Log. meters.</i>	<i>Miles.</i>
Baldy.....	265 32 16.00	85 58 37.87	4.68941	30.392
Taylor.....	307 38 14.00	127 55 45.98	4.61501	25.607

#### QUARTZITE, LEMHI COUNTY, IDAHO.

On a quartz knob and timbered hill on main divide between Middle Fork of Salmon River and Salmon River, Yellow Jacket Creek to west and Musgrove Creek to the east. Between mileposts 6 and 7 on the divide trail from the Forney-Yellow Jacket wagon road crossing the divide to Clear Creek; 14 miles northwest of Forney and 15 miles northeast of Yellow Jacket. Good camping ground 1 mile west, near milepost 8.

Station mark: A chipped place on edge of a sharp quartz boulder under a small monument and signal.

Reference mark: A chiseled cross on rock 14.35 feet west; also, a blazed tree 8.30 feet northwest.

[Latitude 45° 03' 38.41". Longitude 114° 26' 45.93".]

To station—	Azimuth.	Back azimuth.	Distance.	
			<i>Log. meters.</i>	<i>Miles.</i>
Middle Fork.....	56 33 25.00	236 24 34.00	4.29496	12.254
Taylor.....	316 48 28.00	136 58 15.00	4.42558	16.555

**RAM, CUSTER COUNTY, IDAHO.**

On the highest bald rock peak 2 miles south of Bay Horse. About 5 miles southwest of the junction of Bay Horse Creek and Salmon River. At the head of the first south fork west of Salmon River and first east of Bay Horse City, of Bay Horse Creek. A good log slide up this creek nearly to the top. Best reached from Farren's ranch at the bridge across Salmon River at the mouth of Bay Horse Creek, by following the long ridge on south side of Bay Horse Creek. The peak is very prominent and furnishes a good view in all directions.

Station mark: A chiseled cross on top of long narrow rock buried under monument and tree signal.

Reference mark: A chiseled cross on long narrow rock 9.9 feet north.

[Latitude 44° 22' 03.62". Longitude 114° 20' 36.27".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	<i>Log. meters.</i>	<i>Miles.</i>
Potaman.....	14 27 54.21	194 25 41.99	4.2259548	10.455
Robinson Bar.....	60 33 47.37	240 17 09.23	4.5616082	22.644
McGowan.....	85 54 35.84	265 33 38.25	4.6015083	24.823
Bonanza.....	87 47 01.06	267 32 27.43	4.4423271	17.206
Mount Eustes.....	106 40 14.63	286 24 48.82	4.4848503	18.976
Eleven Miles.....	122 36 13.96	302 27 23.58	4.2985382	12.356
Trap.....	127 49 00.61	307 36 29.14	4.4770013	18.636
Twin.....	157 19 00.00	337 13 26.23	4.4352802	16.929
Grouse.....	221 55 34.76	42 06 03.33	4.4718106	18.415
Pahsimeroi.....	260 38 06	81 12 30	4.82002	41.055
Jerry.....	330 59 12.98	151 09 05.94	4.5912949	24.246

**RAMEY, IDAHO COUNTY, IDAHO.**

On a sharp white hill with scattered trees on the divide extending west from the junction of Loon Creek and Middle Fork of Salmon River, about 4 miles west and visible from the barn of R. L. Ramey's ranch at the above junction. The best route is to cross Loon Creek over Ramey's Bridge and follow the old Thunder Mountain trail up Salmon River for a mile or so before fording the Middle Fork, thence up the long grassy ridge to station. Middle Fork can only be forded late in the summer. There is a cable across river at Ramey's, but only for passengers.

Station mark: A chiseled cross on solid rock under a big monument and tree signal.

Reference mark: A chiseled cross on solid rock 14.55 feet east.

[Latitude 44° 49' 43.27". Longitude 114° 51' 50.95".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	<i>Log. meters.</i>	<i>Miles.</i>
Trap.....	231 41 27.00	151 50 51.00	4.57197	23.191
Prominent.....	268 09 38.00	188 07 27.00	4.46266	18.030

**RAY SHEEP, CUSTER COUNTY, IDAHO. (Not occupied.)**

On the big prominent rock peak 10 miles west of (Ivers) Lost Pocket Mine. The peak is locally known as Sheep and is reached from the Ivers-Greyhound trail.

Station mark: Center of rock monument.

[Latitude 44° 35' 58.67". Longitude 115° 00' 29.82".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	<i>Log. meters.</i>	<i>Miles.</i>
Sleeping Deer.....	233 20 41.00	53 34 06.00	4.49652	19.492
Trap.....	284 10 29.00	104 25 56.00	4.47815	18.685

**RED ROCK, LEMHI COUNTY, IDAHO.**

On a red-rock peak, called Independence Mountain, on divide between Fourth of July and Yellow Jacket creeks. Seven miles west of Forney and 8 miles east of Yellow Jacket. The wagon road joining these two places crosses the divide about  $1\frac{1}{2}$  miles south. The trail along the divide north from the road passes over the top of the peak.

Station mark: Tablet under a large monument.

Reference mark: A chiseled cross on solid rock 12.50 feet northwest.

[Latitude  $45^{\circ} 00' 03.98''$ . Longitude  $114^{\circ} 25' 44.49''$ .]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	Log. meters.	Miles.
Middle Fork.....	76 35 07.33	256 25 33.07	4.2625318	11.373
M. P. 12.....	149 16 43.00	329 13 21.00	4.08747	7.600
Baldy.....	244 01 19.00	64 19 11.00	4.5659159	22.870
Low.....	265 13 02.00	85 23 07.00	4.27401	11.678
Taylor.....	307 10 46.51	127 19 50.12	4.3262490	13.170

**REDWINGS, CUSTER COUNTY, IDAHO.**

On the northernmost one of five peaks of a short, isolated, high, red-rock mountain, locally known as Sheep Mountain, on ridge between the waters of Herd Creek and the main East Fork of Salmon River, at the head of McDonald and Fox creeks to the north and west into the East Fork of Salmon and Taylor Creek and other tributaries of Herd Creek to the east. About 15 miles south of the junction of the East Fork and main Salmon River, 6 miles south of the mouth of Herd Creek. Can be reached either from the East Fork or Herd Creek.

Station mark: A chiseled cross on rock under a very large monument.

Reference mark: A chiseled cross on rock set 7.25 feet west.

[Latitude  $44^{\circ} 03' 53.76''$  (from south). Longitude  $114^{\circ} 21' 34.08''$ .]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	Log. meters.	Miles.
Twin (from north).....	171 04 24.45	350 59 31.97	4.7744793	36.968
Grouse (from north).....	200 43 47.67	20 54 54.96	4.7748586	37.001
Beauty (from north).....	259 53 34.45	80 17 45.35	4.67276	29.249
Herd (from north).....	308 55 04.13	129 00 40.12	4.14135	8.604
Ram (from south).....	182 10 35.84	.....	4.5272098	20.920
Spar (from south).....	222 29 48.89	.....	4.4190339	16.307
Anderson (from south).....	241 02 53.51	61 16 56.01	4.4873088	19.084
Jerry (from south).....	271 21 22.57	91 31 54.11	4.3057363	12.563
Porphyry (from south).....	294 25 49.51	114 42 44.00	4.5536465	22.233
Smiley (from south).....	312 20 33.65	132 43 26.60	4.7781759	37.284

**REED & DAVIS, CUSTER COUNTY, IDAHO.**

On a low lone grassy hill in upper Copper Basin, between East Fork of Lost River and Star Hope Creek. Two miles west of Reed & Davis copper mine and 25 miles southwest of Mackay. A good view of the entire copper basin from the point.

Station mark: A chiseled cross on solid rock over which is centered a large monument.

Reference mark: Aluminum tablet set in solid rock 5.7 feet north.

[Latitude  $43^{\circ} 49' 02.0''$ . Longitude  $113^{\circ} 51' 12.7''$ .]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	Log. meters.	Miles.
Starhope.....	130 20 28	310 18 30	3.68732	3.024
Porphyry.....	147 31 16	327 27 06	4.17590	9.318
Shelly.....	263 59 14	84 04 33	4.01480	6.429

**ROBINSON BAR, CUSTER COUNTY, IDAHO.**

On the northern of two rocky peaks in the mountains on the west side of Warm Springs Creek and south of main Salmon River. About 5 miles south of Robinson Bar Hotel, on the stage road at the junction of Warm Springs Creek and Salmon River, 12 miles east of Stanley Basin. The station gives a good view of the Sawtooth Range. Easily reached from the Warm Springs Creek trail.

Station mark: A chiseled cross on solid rock under a tree signal and a monument of big boulders.

Reference mark: A chiseled cross on solid rock 12.5 feet northeast.

[Latitude 44° 12' 20.87". Longitude 114° 44' 25.73".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	<i>Log. meters.</i>	<i>Miles.</i>
Trap.....	192 13 07.94	12 17 17.16	4.5703090	23.103
Ram.....	240 17 09.23	60 33 47.37	4.5616082	22.644

**ROCKY, LEMHI COUNTY, IDAHO.**

On a high rocky peak locally known as Rocky, on a side ridge, between Twin and Ditch creeks, Salmon River basin, about 1 mile east of the main Bitter Root divide, milepost 412, Idaho-Montana boundary. Horses can be taken to the top by following the high divide east and north from State-line trail at milepost 411 or by coming up the trails from Gibbonsville to Alta, Mont. Cut-off trail leaves milepost 409 and joins wagon road on Hughes Creek, Mont.; also another at the 4 A. P. M. 405 connects with wagon road up the south fork of Hughes Creek at milepost 407 trail, goes southeast, connecting with Gibbonsville and Salmon City wagon road up North Fork of Salmon River at mouth of Ditch Creek. Fair summer camping grounds in basin on all sides of the peak, but good camping on saddle on State-line trail near milepost 410.

Station mark: Center of large monument 12 feet high.

Reference mark: Tablet 7.7 feet northwest.

[Latitude 45° 35' 43.92". Longitude 114° 03' 15.72".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	<i>Log. meters.</i>	<i>Miles.</i>
Blue Nose.....	60 15 04.58	240 02 06.28	4.4358926	16.953
Castle.....	113 09 28.69	292 51 49.01	4.5422361	21.656
Piquett.....	145 14 24.24	325 08 34.41	4.2682945	11.524
Trapper.....	150 09 06.90	329 58 41.61	4.5777112	23.500
Deer.....	180 00 45.57	00 00 45.92	4.6805395	29.777
Saddle.....	202 04 06.24	22 07 09.50	4.1687967	9.165
Johnson.....	224 29 41.42	44 44 23.72	4.5791919	23.580
Ruby.....	272 55 29.00	93 08 38.00	4.37965	14.893
Big Hole Pass.....	288 24 41.00	108 34 30.00	4.27502	11.705
Sheep.....	298 54 01.02	119 06 38.37	4.4203509	16.356

**SADDLE, FREMONT COUNTY, IDAHO. (Not occupied.)**

On Saddle Mountain, a high rocky peak on Cedar Point, which is the southeast end of the Little Lost River Range. Ten miles north of Howe and 20 miles southwest of Reno. Water and grass at springs at head of South Creek, the nearest camping place. Horses can be taken about 1,000 feet below top.

Station mark: A triangulation tablet set in placed rock centered under a large monument.

Reference mark: A chiseled cross on solid rock 27 feet southwest.

[Latitude 43° 56' 16.3". Longitude 112° 57' 13.5".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	Log. meters.	Miles.
Jumpoff.....	31 12 42	211 06 21	4.37533	14.746
King.....	55 34 10	235 20 53	4.49390	19.375
East Butte.....	334 22 37	154 34 34	4.73392	33.673

**SAL, LEMHI COUNTY, IDAHO.**

On the highest dome-shaped, partly timbered rocky mountain between the forks of Lemhi and Salmon rivers. About 10 miles south of Salmon. Best reached by taking the Warm Springs road to Mill Creek, the end of the road, thence by trail along the east face of the mountain just below slide rock to a mine on top of hill north of station, thence along ridge to station.

Station mark: A triangulation tablet cemented in a large rock under big monument.

Reference mark: A chiseled cross on solid rock 14.9 feet south.

[Latitude 45° 00' 56.83". Longitude 113° 50' 31.70".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	Log. meters.	Miles.
Lem.....	4 04 59.82	184 04 00.00	4.41728	16.242
Grouse.....	21 49 55.82	201 39 16.65	4.7310495	33.450
Baldy.....	137 48 24.08	317 41 20.43	4.2891545	12.092
Graveyard.....	171 54 31.00	351 53 18.00	4.20204	9.895
Sheep.....	185 07 04.56	7 10 35.54	4.7166018	32.356
Goldstone.....	241 09 49.35	61 21 09.08	4.3794112	14.885
Bloody Dick.....	249 17 02.37	69 39 08.08	4.6406553	27.165
E and W.....	302 17 06.05	122 34 36.24	4.5870729	24.012
Hi Peak.....	358 41 37.82	178 42 04.48	4.56247	22.689

**SALMON, IDAHO COUNTY, IDAHO. (Not occupied.)**

Station mark: Monument on summit of Salmon Peak.

[Latitude 45° 37' 03.2". Longitude 114° 50' 09.3".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	Log. meters.	Miles.
Trapper.....	233 56 13.00	54 19 22.00	4.71405	32.166
Piquett.....	255 30 44.00	75 58 26.00	4.71525	32.255

**SCORPION, BLAINE COUNTY, IDAHO.**

On Scorpion Mountain on side ridge between Muldoon and Garfield creeks, 1 mile south of the main divide between East Fork of Lost River and Wood River basins, The trail from Copper Basin to Muldoon Creek comes through the first pass in sight and 1 mile east of station. Three miles north of the old mill on Muldoon Creek. The monument is about center of the mountain, the south end of which is several feet higher.

Good camping grounds in the head of the creeks around the mountain. About one hour's climb afoot.

Station mark: A chiseled cross on placed rock centered under large monument.

Reference mark: A triangulation tablet in solid rock 15.2 feet southwest.

[Latitude 43° 37' 57.78". Longitude 113° 53' 05.28".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	Log. meters.	Miles.
Buzz.....	12 59 37	192 56 37	4.41073	16.232
Garfield.....	67 27 01	247 23 00	3.92839	5.269
Porphyry.....	170 30 45.10	350 27 53.26	4.5264167	20.882
Smiley.....	219 12 21.21	39 15 28.89	3.9835899	5.983
Crawford.....	252 55 06.14	73 12 10.89	4.5408977	21.590
Pion.....	283 36 20	103 37 56	3.53644	2.137
Blizzard.....	310 13 53.10	130 22 51.43	4.3614759	14.283
Crooks.....	342 46 47	162 50 37	4.40511	15.793
Freedom.....	350 15 47	170 17 01	4.15609	8.901

**SHEEP 1 A. P. 452, IDAHO-MONTANA (LEMHI COUNTY, IDAHO; BEAVERHEAD COUNTY, MONT.).**

Station mark: State line boundary post.

[Latitude 45° 28' 50.46". Longitude 113° 45' 34.60".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	Log. meters.	Miles.
Baldy.....	27 42 58.24	207 32 21.66	4.6238484	26.134
Blue Nose.....	89 12 36.52	268 47 02.43	4.6696893	29.042
Rocky.....	119 06 38.37	298 54 01.02	4.4203509	16.356
Johnson.....	185 18 33.53	5 20 36.04	4.6015059	24.823

**SHELLY, CUSTER COUNTY, IDAHO.**

On the east and highest of the five peaks on a high red-slate ridge extending northwest and southeast, locally known as Shelly Mountains. The peak is sometimes called Bird Peak and divides the waters of East Fork of Lost River and Antelope Creek. Cabin, Cherry, and Alder creeks all head at the peak. Eight miles south of Mackay City and 4 miles northeast of Reed & Davis copper mine in Copper basin. Easiest reached from the head of Cabin Creek, Cherry Creek, or the extreme tributary of northeast East Fork of Lost River.

Station mark: A chiseled cross on placed rock centered under large monument.

Reference mark: Triangulation tablet set in solid rock 8 feet south.

[Latitude 43° 49' 36.89". Longitude 113° 43' 32.16".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	Log. meters.	Miles.
Smiley.....	25 32 53.54	205 29 25.14	4.1943469	9.721
Copper Basin Knob.....	51 25 23	231 20 18	4.10078	7.84
Copper Basin ranger station.....	76 29 31	256 25 00	3.95473	5.60
Standhope.....	79 09 44	258 57 19	4.38900	15.22
Reed & Davis.....	84 04 33	263 59 14	4.01480	6.43
Starhope.....	98 29 10	278 21 56	4.15079	8.79
Porphyry.....	122 19 14.8	302 09 45.42	4.3361139	13.473
Anderson.....	150 02 56.21	329 50 31.58	4.6782155	29.619
Mackay.....	196 33 14.42	16 34 18.94	3.8630279	4.533
King.....	278 12 36.14	98 31 23.38	4.5657993	22.864
Crawford.....	299 15 46.53	119 26 16.39	4.3685909	14.519
Lope.....	308 16 45	128 22 19	4.13809	8.54
Timbered Dome (tree).....	327 47 58	147 55 37	4.44620	17.74
Taylor's White House.....	328 22 41	148 27 31	4.24892	11.02
Black Cap.....	333 21 57	153 26 42	4.31382	12.80

**SHELDON, LEMHI COUNTY, IDAHO. (Not occupied.)**

On a prominent red-rock peak on divide between Camas and Warm Spring creeks. About 10 miles southeast of Three Forks ranch. The trail from Camas Creek to Warm Springs Creek crosses the divide near the peak. Peak is locally known to the forest rangers.

Station mark: Center of peak; no monument.



[Latitude 44° 42' 00.01". Longitude 114° 33' 39.67".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	<i>Log. meters.</i>	<i>Miles.</i>
Prominent.....	63 00 24.00	242 45 26.00	4.50032	19.665
Sleeping Deer.....	126 20 14.00	306 14 46.00	4.10429	7.900

**SLEEPING DEER, LEMHI COUNTY, IDAHO.**

On the highest peak on the divide between Camas and Loon creeks. Cabin and Cache creeks, Loon Creek drainage, to the west; west part of Camas Creek to the east. Woodtick Creek heads about 1 mile north. About 15 miles southwest of Three Forks ranch, Myers Cove post office.; 30 miles southwest of Forney and 15 miles south-east of the junction of Loon Creek and Middle Fork of Salmon River, Ramey's ranch. The trail from the Three Forks ranch up the west fork of Camas Creek crosses the divide at the head of Woodtick Creek 1 mile north of station and goes down Cache Creek to Loon Creek and Middle Fork of Salmon River. From this trail in the pass a good route to the peak is south along the divide to a lake and grass at the north foot in the upper basin of Cache Creek.

Station mark: Triangulation tablet under a large monument.

Reference mark: A chiseled cross on a big boulder 53.9 feet west.

[Latitude 44° 46' 03.79". Longitude 114° 41' 25.39".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	<i>Log. meters.</i>	<i>Miles.</i>
Prominent.....	39 15 46.25	219 06 15.23	4.4520672	17.596
Ray Sheep.....	53 34 06.00	233 20 41.00	4.49652	19.492
Middle Fork.....	187 24 30.01	7 26 00.69	4.3394058	13.576
Taylor.....	250 36 20.68	70 56 26.49	4.5993195	24.726
Sheldon.....	306 14 46.00	126 20 14.00	4.10429	7.900
Twin.....	318 33 22.77	138 42 26.15	4.4108000	16.001
Trasp.....	351 31 54.03	171 33 57.75	4.4215253	16.401

**SMILEY, CUSTER COUNTY, IDAHO.**

On Smiley Mountain, a very high prominent peak, half a mile east of the main divide between East Fork of Lost River and Antelope Creek. At the head of Bear and Iron Bog creeks, drainage of Antelope Creek and Lake Creek, a tributary of Starhope Creek. About 8 miles south of Reed & Davis copper mine, in Copper basin; 15 miles west of Grouse post office. Horses can be taken to the station from the Lake Creek side.

Station mark: A chiseled cross on placed rock centered under a very large monument.

Reference marks: (1) Aluminum bench-mark tablet set in rock buried 1 foot under rocks 5.6 feet northwest—a small stake marks the place; (2) chiseled cross on rock in hole 11.2 feet north.

[Latitude 43° 41' 59.46". Longitude 113° 48' 33.46".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	<i>Log. meters.</i>	<i>Miles.</i>
Pion.....	18 22 31	198 21 06	3.94039	5.42
Scorpion.....	39 15 28.89	219 12 21.21	3.9835899	5.983
Standhope.....	118 43 45	298 34 50	4.29551	12.27
Redwings.....	132 43 26.60	312 20 33.65	4.7781759	37.284
Big Black Dome.....	135 01 10	314 54 06	4.28689	12.03
Copper Basin Knob.....	153 28 04	333 26 28	3.84400	4.34
Porphyry.....	155 41 55.53	335 35 55.40	4.4501498	17.519
Ante.....	204 07 33	24 10 03	4.07471	7.380
Shelly.....	205 29 25.14	25 32 53.54	4.1943469	9.721
Lope.....	252 13 43	72 22 45	4.26501	11.44
Crawford.....	264 16 29.47	84 30 27.01	4.4355977	16.941
Taylor's White House.....	273 28 31	93 36 46	4.20622	9.99
Timbered Dome (tree).....	293 42 27	113 53 33	4.37364	14.69
Blizzard.....	333 51 25.44	152 57 16.65	4.3993359	15.584

**SPAR, CUSTER COUNTY, IDAHO.**

On a black-rock knob on a sagebrush hill on the divide between Spar Creek and Road Canyon, near their heads. About 8 miles east of the bridge across East Fork of Salmon River; between 2 and 3 miles south of the forks of the old Bay Horse road from the present Mackay-Clayton road at the elbow near Gossi Summer ranch.

Station mark: A chiseled cross under a rock monument.

Reference mark: A chiseled cross on solid rock 5.35 feet northeast.

[Latitude 44° 14' 19.88". Longitude 114° 08' 15.13".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	<i>Log. meters.</i>	<i>Miles.</i>
Twin.....	145 47 22.00	325 33 09.91	4.6790802	29.678
Grouse.....	185 25 10.46	5 26 59.76	4.5622512	22.678

**STANDHOPE, CUSTER COUNTY, IDAHO. (Not occupied.)**

On one of a number of high peaks on the divide between Standhope and Fall Creek. Three miles east of Mount Hyndman Peak and 8 miles west of Reed & Davis copper mine, in Copper basin. Best reached from the east by following up the west fork of Standhope Creek. A long rough climb afoot.

Station mark: A tablet in placed rock under center of large monument.

Reference mark: A chiseled cross on solid rock 7.2 feet west.

[Latitude 43° 47' 06.3". Longitude 114° 01' 27.9".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	<i>Log. meters.</i>	<i>Miles.</i>
Shelly.....	258 57 19	79 09 44	4.38900	15.218
Smiley.....	298 34 50	118 43 45	4.29551	12.269
Scorpion.....	326 20 32	146 27 10	4.30804	12.630

**STARHOPE, CUSTER COUNTY, IDAHO.**

On a grassy hill, bluffly on east, in Copper basin, on west side of Starhope Creek. One mile south of the junction of Starhope Creek and East Fork of Lost River; 4 miles west of Reed & Davis copper mine. Easily reached from all directions.

Station mark: Chiseled cross on placed rock centered under boulder monument.

Reference mark: Aluminum tablet 4.5 feet north.

[Latitude 43° 50' 44.1". Longitude 113° 53' 58.7".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	<i>Log. meters.</i>	<i>Miles.</i>
Porphyry.....	155 24 06	355 21 51	4.01883	6.488
Shelly.....	278 21 56	98 29 10	4.15079	8.793
Reed & Davis.....	310 18 30	130 20 28	3.68732	3.024

**SUMMIT ROCK, CUSTER COUNTY, IDAHO.**

On a high rock knob on a timbered hill on the divide between the waters of the Yankee Fork to the west and Challis and Mill creeks to the east. Six miles west of Mosquito Flats, on Challis Creek, and 18 miles east of Bonanza. The wagon road from Challis, 16 miles east, to Custer, 16 miles west, crosses the divide at the heads of Mill and Summit creeks in view of and 1 mile southeast of station.

Station mark: A chiseled cross on solid rock under a large monument.

Reference mark: A triangulation tablet in solid rock 16.95 feet northeast.

[Latitude 44° 29' 38.09". Longitude 114° 29' 47.35".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	Log. meters.	Miles.
Mount Eustes.....	72 43 08.02	252 34 07.22	4.2522856	11.108
Twin.....	188 26 42.77	8 27 35.19	4.0501070	6.973

**SUNSET, CUSTER COUNTY, IDAHO. (Not occupied.)**

On the first high peak, main backbone Lost River Range, east of Pass Creek pass, through which the road from Mackay to Little Lost River goes; about 5 miles east and easily reached from the Pass Creek ranger station.

Station mark: Chiseled cross on placed rock centered under a large monument.

Reference mark: A triangulation tablet set in solid rock under small rock pile 17.10 feet southeast.

[Latitude 43° 58' 35.1". Longitude 113° 22' 09.2".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	Log. meters.	Miles.
Crawford.....	16 32 20	196 28 02	4.46640	18.188
Mackay.....	70 11 21	249 57 10	4.45068	17.540
King.....	340 36 35	160 40 35	4.36698	14.467

**TAYLOR, LEMHI COUNTY, IDAHO.**

On the highest rocky mountain on divide between Moyer Creek to the west and Hat Creek to the east, Morgan Creek to the south, all Salmon River drainage. About 8 miles southeast of Forney post office and 25 miles north of Challis, Idaho. The wagon road connecting these two places crosses the divide between Panther and Morgan creeks about 5 miles southwest of station. Best route is up the divide on the north side of Lake Creek; camping grounds in basins on all sides of the peak.

Station mark: A triangulation tablet under a large monument.

Reference mark: A chiseled cross on solid rock 6.9 feet north.

[Latitude 44° 53' 08.32". Longitude 114° 12' 54.97".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	Log. meters.	Miles.
Twin.....	32 33 09.40	212 22 09.38	4.5847348	23.883
Black Mountain.....	64 09 13.92	244 03 48.05	4.0519739	7.003
Sleeping Deer.....	70 56 26.49	250 36 20.68	4.5998195	24.726
Middle Fork.....	104 00 55.98	283 42 18.83	4.5530661	22.203
Wilson.....	125 05 49.98	304 48 28.90	4.59506	24.457
Red Rock.....	127 19 50.12	307 10 46.51	4.3262490	13.170
Puddin.....	127 55 45.98	307 38 14.00	4.61501	25.608
Forney.....	128 35 22.98	308 30 23.75	4.0749643	7.384
Quartzite.....	136 58 15.00	316 48 28.00	4.42558	16.555
Bee Hive.....	144 50 40.01	324 36 26.09	4.6600568	28.406
Low.....	187 26 51.00	7 27 52.00	4.16115	9.005
Baldy.....	209 23 49.98	29 32 36.87	4.5205800	20.603
Grouse.....	344 50 53.59	164 56 00.42	4.5660021	22.875

**TAYLOR'S WHITE HOUSE, CUSTER COUNTY, IDAHO. (Not occupied.)**

Two-story white frame, house owned by Mr. Taylor. On the flat between the junction of Antelope and Cherry creeks about 1 mile east of Grouse post office. Ranch is known as the old Cherry ranch.

Station mark: Center of house.

[Latitude 43° 41' 27.3". Longitude 113° 36' 36.9".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	<i>Log. meters.</i>	<i>Miles.</i>
Smiley.....	93 36 46	273 28 31	4.20622	9.991
Ante.....	136 40 31	.....	4.21156	10.114
Shelly.....	148 27 31	328 22 44	4.24892	11.022

**THE GENERAL, CUSTER COUNTY, IDAHO.**

On the highest reddish-white peak on the main divide between Salmon and the Middle Fork of Salmon rivers, at the heads of Mayfield, Big Loon, and Lightning creeks; about 6 miles northwest of Sunbeam Mill and 8 miles south of Loon Creek Center ranger station. Can be reached by following up the above-named creeks. The best route is up Jordan Creek to Mount Jordan, thence along the main divide to station. There is only one saddle between the two peaks.

Station mark: A chiseled cross on rock set under large monument.

Reference mark: A triangulation tablet in large boulder 30.90 feet northwest.

[Latitude 44° 29' 02.37". Longitude 114° 48' 07.67".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	<i>Log. meters.</i>	<i>Miles.</i>
Prominent.....	136 39 30.63	316 34 43.15	4.1199010	8.189
Trap.....	246 57 02.71	67 03 48.13	4.1422912	8.623

**THOMPSON PEAK, CUSTER-BOISE COUNTY, IDAHO. (Not occupied.)**

On the north high sharp peak of the Sawtooth Range. The mountains to the south are very rough and high, to the northwest they are much lower and smoother; about 10 or 15 miles west of Stanley. The peak is very prominent and well-defined.

Station mark: Center of peak.

[Latitude 44° 12' 47.46". Longitude 115° 04' 51.53".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	<i>Log. meters.</i>	<i>Miles.</i>
Prominent.....	198 16 27.00	18 23 22.00	4.62109	25.968
Trap.....	224 27 13.00	44 45 42.00	4.69794	30.995

**TIMBER CREEK, LEMHI COUNTY, IDAHO.**

On the south one of two big rocky domes in the Lemhi Mountains on the east side of Timber creek; about 15 miles south of Leadore, Idaho. Easily reached from the Timber Creek trail.

Station mark: Triangulation tablet in large rock under monument.

Reference mark: A chiseled cross on solid rock 14.90 feet distant.

[Latitude 44° 29' 47.22". Longitude 113° 24' 17.98".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	<i>Log. meters.</i>	<i>Miles.</i>
E and W.....	177 03 28.56	357 02 27.73	4.56864	23.014
Horse Prairie.....	215 52 40.00	36 03 58.00	4.55911	22.514
Garfield Mountain.....	267 14 12.00	87 47 12.00	4.79568	38.818
Eighteen-mile Peak.....	279 17 08.00	99 34 20.00	4.51879	20.518

**TIMBERED DOME, BLAINE COUNTY, IDAHO. (Not occupied.)**

A prominent partly timbered hill on grassy divide between waters of Grass Creek and drainage east to Lava Beds, about 3-miles north of the pass through which the road goes from Dry Fork of Antelope Creek to Champagne Creek.

Station mark: Tallest tree.

[Latitude 43° 36' 50.4". Longitude 113° 32' 28.2".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	<i>Log. meters.</i>	<i>Miles.</i>
Blizzard.....	38 42 16	218 37 13	4.21426	10.177
Smiley.....	113 53 33	293 42 27	4.37364	14.688
Shelly.....	147 55 37	327 47 58	4.44620	17.359
Crawford.....	204 21 28	24 24 52	4.12713	8.327

**XIII, IDAHO COUNTY, IDAHO. (Not occupied.)**

On round peak, about 6 miles south of Salmon Peak.

[Latitude 45° 31' 47.2". Longitude 114° 45' 41.2".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	<i>Log. meters.</i>	<i>Miles.</i>
Blue Nose.....			4.50810	20.019
Trapper.....			4.73247	33.560
Piquett.....			4.69827	31.018
Rocky.....			4.74573	34.600

**356 IDAHO-MONTANA BOUNDARY LINE. (Secondary point.)**

On a grassy hill with scattered trees on main divide Bitter Root Range, 93 feet south of small iron State-line angle post, marked "Idaho-Montana 1 A P 356 M" and 840 feet by stepping north of big iron post marked "Idaho-Montana 356.062 M." The Elk City trail passes by the side of the station. Good camping place in Nez Perce Pass, 1 mile south on State-line trail.

Station mark: A chisel cross in rock set under quadripod signal.

Reference mark: Small iron angle post 1 A P 356 M, 93 feet north.

[Latitude 45° 44' 07.00". Longitude 114° 31' 51.87".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	<i>Log. meters.</i>	<i>Miles.</i>
Trapper.....	226 28 11.38	46 38 15.97	4.3992043	15.580
Piquett.....	270 31 54.71	90 46 33.44	4.4237628	16.486
Castle.....	290 35 51.71	110 38 39.58	3.7337278	33.658

**TRAP, CUSTER COUNTY, IDAHO.**

On a very conspicuous red-rock cone-shaped peak (called Sherman Peak) on a high ridge between East Mayfield Creek and Trappers Creek, a fork of Warm Springs Creek. About 1 mile north of the main divide between the waters of main Salmon and Middle Fork of Salmon River. Ten-mile Creek, a tributary of Yankee Fork, heads in a low saddle opposite the head of Trappers Fork of Warm Springs Creek, about 2 miles south. The new trail from Challis, via Mosquito Flat and Yankee Fork, crosses the ridge between Trappers Fork and East Mayfield Creek about 1 mile south of peak. Challis is about 30 miles east and Loon Creek Center 15 miles west. Only grass is at the head of Yankee Fork and at the forks of East Mayfield Creek.

Station mark: A bronze tablet under a large monument.

Reference mark: A chiseled cross on rock set under small rock pile 6.50 feet north. This was the point occupied.

## 214 TRIANGULATION AND PRIMARY TRAVERSE, 1913-1915.

[Latitude 44° 31' 57.98". Longitude 114° 38' 29.34".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	Log. meters.	Miles.
Robinson Bar.....	12 17 17.16	192 13 07.94	4.5703090	23.103
McGowan.....	37 02 58.71	216 54 30.57	4.4262530	16.581
Thompson Peak.....	44 45 42.00	224 27 13.00	4.69794	30.995
The General.....	67 03 48.13	246 57 02.71	4.1422912	8.623
Prominent.....	100 53 20.66	280 41 47.32	4.3464774	13.798
Ray Sheep.....	104 25 56.00	284 10 29.00	4.27815	18.685
Ramey.....	151 50 51.00	231.41 27.00	4.57197	23.191
Sleeping Deer.....	171 33 57.75	351 31 54.03	4.4215253	16.401
Twin.....	242 41 22.82	62 48 21.54	4.1706285	9.204
Ram.....	307 36 29.14	127 49 00.61	4.4770013	18.636
Potaman.....	330 27 22.10	150 37 40.17	4.5996871	24.719

## TWIN, CUSTER COUNTY, IDAHO.

On the south peak of Twin Peaks on the main divide between the basins of main Salmon and Middle Fork of Salmon rivers. Bear Creek to the east and Warm Springs Creek, a tributary of Loon Creek, to the west. About 20 miles northwest of Challis. Six miles east of the old Parker Mountain Mine. The trail and telephone line from Challis up Bear Creek and down Warm Springs Creek passes through the saddle between the two peaks about a quarter of a mile north of peak. About 1,000-foot climb from pass to top. A ranger cabin is at the head of Bear Creek but no horse feed within 6 miles. The peak is used as a lookout station point by the Forest Service. Besides the Survey monument there is a large half-circle rock wind wall protecting the telephone.

Station mark: A triangulation tablet under a large monument.

Reference marks: The center of three posts used as a protractor station, the north end of the rock wall, the center of the rock wall, and the south end of the rock wall.

[Latitude 44° 35' 37.72". Longitude 114° 28' 32.62".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	Log. meters.	Miles.
Summit Rock.....	8 27 35.19	188 26 42.77	4.0501070	6.973
Mount Eustes.....	48 46 15.16	228 36 21.49	4.3960898	15.468
Trap.....	62 48 21.54	242 41 22.82	4.1706285	9.204
Sleeping Deer.....	138 42 26.15	318 33 22.77	4.4108000	16.001
Taylor.....	212 22 09.38	32 33 09.40	4.5847348	23.883
Grouse.....	275 43 31.01	95 59 35.22	4.4838014	18.930
Challis.....	296 40 42.00	116 49 40.00	4.27740	11.769
Beauty.....	312 11 16.97	132 40 27.38	4.87564	46.664
Lone Pine.....	318 26 18.00	138 39 11.00	4.56600	22.874
Spar.....	325 33 09.91	145 47 22.00	4.6790802	29.678
Bay Horse.....	333 04 15.00	153 09 16.00	4.32112	13.016
Ram.....	337 13 26.23	157 19 00.00	4.4352802	16.929
Redwings.....	350 59 31.97	171 04 24.45	4.7744793	36.965

## WAUGH MOUNTAIN, IDAHO COUNTY, IDAHO. (Not occupied.)

Station mark: Monument on summit of Waugh Mountain.

[Latitude 45° 29' 41.4". Longitude 114° 47' 31.4".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	Log. meters.	Miles.
Blue Nose.....	.....	.....	4.53266	21.184
Trapper.....	.....	.....	4.76718	36.352
Piquett.....	.....	.....	4.73131	33.470
Rocky.....	.....	.....	4.76855	36.467

**WILSON, LEMHI COUNTY, IDAHO. (Not occupied.)**

On a high peak at the head of Wilson Creek. It is the last high rocky peak south of Mount McGuire. Can be reached by following the divide north from the Yellow Jacket-Mormon ranch trail. No monument.

[Latitude 45° 05' 18.81". Longitude 114° 37' 27.57".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	<i>Log. meters.</i>	<i>Miles.</i>
Baldy.....	262 21 21.60	82 47 32.87	4.68914	30.373
Taylor.....	304 48 28.90	125 05 49.98	4.59506	24.457

**BLOODY DICK, BEAVERHEAD COUNTY, MONT.**

On the highest peak on the Bloody Dick Divide, which separates the waters of the Big Hole River to the north and the waters of the Horse Prairie Creek to the south. About 15 miles south of Jackson in the Big Hole and the same distance northwest of Grant, a station on the Pittsburgh & Gilmore Railroad on Horse Prairie Creek. It is easily reached from a cow ranch in the Bloody Dick basin.

Station mark: A triangulation tablet cemented into a solid rock under a large monument.

Reference mark: A chiseled cross on solid rock 14 feet south.

[Latitude 45° 09' 13.54". Longitude 113° 19' 19.66".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	<i>Log. meters.</i>	<i>Miles.</i>
E and W.....	13 11 52.61	193 07 20.50	4.5685499	23.009
Sal.....	69 39 08.08	249 17 02.37	4.6406653	27.165
South Pyramid.....	122 22 12.00	302 07 06.00	4.51723	20.445
Torrey Mountain.....	219 05 44.00	39 20 40.00	4.63786	26.991
Polaris.....	225 49 40.00	46 02 18.00	4.51056	20.133
Brenner.....	329 58 38.81	150 05 40.71	4.4169157	16.228
Horse Prairie.....	341 26 26.09	161 34 17.52	4.6637226	28.646
J. C. B.....	346 16 11.33	166 19 06.14	4.3581100	14.173

**BLUE NOSE, RAVALLI COUNTY, MONT. (IDAHO-MONTANA STATE BOUNDARY LINE).**

On a rocky mountain, old burn on south, on State line at angle point between mile-post 389.245 and 390.181, about 1.5 miles west of South Pass, where the old Shoup trail crosses the State-line trail and about 2 miles east of the Shoup wagon road crossing the State-line trail. The point is easily reached by the State-line trail on the south slope of the mountain. Good camping place on south slope of hill. Spring below Shoup trail. Miner's cabin in basin north foot of same hill.

Station mark: A chiseled cross on slanting solid rock under an 8-foot monument.

Reference mark: A bronze triangulation tablet cemented into a large boulder 11.25 feet southwest.

[Latitude 45° 28' 23.97". Longitude 114° 21' 26.26".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	<i>Log. meters.</i>	<i>Miles.</i>
Bee Hive.....	28 28 05.53	208 19 50.98	4.5026912	19.772
Trapper.....	185 46 34.85	5 49 10.48	4.6683359	28.953
Piquett.....	204 16 53.09	24 24 02.83	4.4999957	19.649
Rocky.....	240 02 06.28	60 15 04.58	4.4358926	16.953
Sheep.....	268 47 02.43	89 12 36.52	4.6696893	29.042
Baldy.....	322 58 20.14	143 13 13.26	4.6587317	28.320

**BRENNER, BEAVERHEAD COUNTY, MONT.**

On the north end of a grassy hill at the high north end of divide between Horse Prairie and Sage creeks. In view from both Brenner and Grant railroad stations, Grant being about 7 miles northeast and Brenner about 6 miles northwest.

Station mark: A triangulation tablet cemented in rock set under a large monument.

Reference mark: A chiseled cross on solid rock 18.9 feet south.

[Latitude  $44^{\circ} 57' 00.59''$ . Longitude  $113^{\circ} 09' 23.55''$ .]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	Log. meters.	Miles.
E and W.....	58 08 03.10	237 56 30.78	4.4043716	15.766
Bloody Dick.....	150 05 40.71	329 58 38.81	4.4169157	16.228
Polaris.....	192 48 09.00	12 53 43.00	4.66577	28.782
Torrey Mountain.....	194 23 13.00	14 31 03.00	4.76430	36.112

**CASTLE, RAVALLI COUNTY, MONT.**

A secondary point on an isolated, rocky knob locally called Castle Rock. About 1 mile east of State line (Idaho-Montana) monument 1 A. P. 359 on the ridge leaving the main summit of the Bitter Root Range at that point and dividing the waters of Blue Joint Creek on the south and Nez Perce Fork or the West Fork of the Bitter Root on the north. The Elk City trail down the ridge passes on south foot of knob and about 500 feet lower than monument. The junction of the two trails, one down the ridge and the other down Nez Perce Fork, is in Nez Perce Pass.

Station mark: A chiseled cross in solid rock under an 8-foot monument.

Reference mark: A hole chiseled for tablet 9.8 feet southeast.

[Latitude  $45^{\circ} 43' 05.21''$ . Longitude  $114^{\circ} 27' 57.42''$ .]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	Log. meters.	Miles.
356.....	110 38 39.58	290 35 51.71	3.7337278	33.658
Piquett.....	265 37 30.89	85 49 21.61	4.3329241	13.375
Rocky.....	292 51 49.01	113 09 28.69	4.5422361	21.656

**COUNTY LINE, RAVALLI AND BEAVERHEAD COUNTIES, MONT.**

On a high, rocky, dome-shaped peak on the Continental Divide at the junction of the divide that separates the waters of Bitter Root River and Rock Creek. East Fork of Bitter Root River, Rock Creek, a tributary of Clarks Fork, and Rock Creek, a tributary of Big Hole River, head at the peak. The station is easily reached by following the road and trail up East Fork of Bitter Root River to the divide and then the divide for about 1 mile to the north foot of the peak, where horses are left, thence a short climb over rocks and boulders. Good camping grounds at old miner's cabin in the northeast corner of the basin at the head of East Fork of Bitter Root River.

Station mark: The center of a large rock monument.

Reference mark: A bronze tablet cemented in rock set 10 feet northeast of station.

[Latitude  $45^{\circ} 56' 22.05''$ . Longitude  $113^{\circ} 30' 55.08''$ .]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	Log. meters.	Miles.
Saddle.....	56 07 41.73	235 47 33.55	4.6422064	27.262
Shirley.....	78 05 06.01	258 49 01.06	4.4713759	18.396
Deer.....	103 15 54.98	282 52 39.73	4.6321691	26.639
Kent.....	122 56 32.33	302 44 31.95	4.4990435	15.937
Warren.....	219 32 49.18	39 35 15.45	3.8373995	4.273



## DEER, RAVALLI COUNTY, MONT.

Summit of peak locally known as Deer Peak, about 6 miles east of Darby and 6 miles north of Ray's ranch on Rye Creek. Easily reached from west or south. Ray's ranch is the closest camp place.

Station mark: A chiseled cross on solid rock under a large monument and quadri-pod signal.

Reference mark: A triangulation tablet set in solid rock 25.40 feet north.

[Latitude 46° 01' 36.10". Longitude 114° 03' 15.23".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	Log. meters.	Miles.
Rocky.....	00 00 45.92	180 00 45.57	4.6805395	29.778
Piquett.....	17 56 44.35	197 50 52.88	4.5360015	21.348
Trapper.....	51 14 28.10	231 04 00.18	4.3829476	15.007
Ward (2).....	131 48 29.40	311 38 31.12	4.3783358	14.849
Pallsades.....	204 55 38.43	25 03 33.92	4.5246832	20.799
Kent.....	258 06 53.32	78 18 09.10	4.3142370	12.811
County line.....	282 52 39.73	103 15 54.98	4.6321691	26.639
Johnson.....	308 06 37.42	128 21 22.59	4.5287627	20.993
Shirley.....	320 57 09.33	141 04 18.27	4.3101738	12.692
Saddle.....	350 49 37.25	170 52 40.84	4.5402883	21.559

## J. C. B., BEAVERHEAD COUNTY, MONT.

On a sharp, prominent low peak in the Horse Prairie Valley. One-quarter mile east of Pittsburgh & Gilmore Railroad track. One mile east of Brenner station; 0.5 mile east of J. C. Brenner's ranch.

Station mark: A triangulation tablet under a large monument.

Reference mark: A chiseled cross on solid rock 7.5 feet northwest.

[Latitude 44° 57' 15.70". Longitude 113° 15' 12.67".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	Log. meters.	Miles.
E and W.....	44 59 40.97	224 52 15.02	4.2929420	12.198
Bloody Dick.....	166 19 06.14	346 16 11.33	4.3581100	14.173
Pass.....	354 19 04.41	174 20 29.44	4.42829	16.659

## JOHNSON, RAVALLI AND BEAVERHEAD COUNTIES, MONT.

On a big, flat burnt-rock hill on Continental Divide, boundary between Ravalli and Beaverhead counties. The divide trail passes along the south slope of the hill. The trail that leaves East Fork of Bitter Root River at Johnson's ranger cabin 10 miles east of Sula post office passes over the north end of the hill and joins the divide trail in the saddle on the east.

Station mark: A chiseled cross on solid rock under a large monument and tripod signal.

Reference mark: A triangulation tablet.

[Latitude 45° 50' 18.84". Longitude 113° 42' 43.31".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	Log. meters.	Miles.
Sheep.....	5 20 36.04	185 18 33.53	4.6015059	24.823
Ruby.....	5 36 44.00	185 35 12.00	4.45356	17.657
Rocky.....	44 44 23.72	224 29 41.42	4.5791919	23.580
Saddle.....	57 46 11.39	237 34 31.78	4.3971479	15.507
Deer.....	128 21 22.59	308 06 37.42	4.5287627	20.993
Kent.....	165 55 29.58	345 51 58.90	4.4133835	16.097

**PIQUETT, RAVALLI COUNTY, MONT.**

On an isolated rocky dome-shaped mountain at the extreme south head of Piquett, Little Boulder, and Warm Springs creeks, about 25 miles south of Darby. Four miles east of the West Fork of Bitter Root, where Blue Joint Creek comes in from the west. Can be reached from the divide between Overwhich and Slate creeks on the south or either of the divide trails from the north. The trail passes by the lakes on the east and north slope of the hill. Good camping place on the lake at the head of creek on trail 500 feet from summit of peak. Horses can be taken nearly to the top.

Station mark: A chiseled cross on placed rock under a large monument.

Reference mark: A bronze tablet cemented into rock by small rock pile 27.5 feet southeast.

[Latitude 45° 43' 57.18". Longitude 114° 11' 24.82'']

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	Log. meters.	Miles.
Blue Nose.....	24 24 02.83	204 16 53.09	4.4999957	19.649
Castle.....	85 49 21.61	265 37 30.89	4.3329241	13.375
356.....	90 46 33.44	270 31 54.71	4.4237628	16.486
Trapper.....	154 44 57.28	334 40 21.98	4.2879001	12.057
Deer.....	197 50 52.88	17 56 44.35	4.5360015	21.348
Saddle.....	275 27 40.64	95 36 34.32	4.2093231	10.062
Rocky.....	325 08 34.41	145 14 24.24	4.2682945	11.524

**POLARIS, BEAVERHEAD COUNTY, MONT. (Not occupied.)**

A monument on "Old Baldy," a big lone mountain west of Dillon, Mont., near Polaris mine. Very prominent.

Station mark: The monument.

[Latitude 45° 21' 23.50". Longitude 113° 01' 31.98'']

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	Log. meters.	Miles.
Brenner.....	12 53 43.00	192 48 09.00	4.66577	28.782
Bloody Dick.....	46 02 18.00	225 49 40.00	4.51056	20.132

**RUBY, BEAVERHEAD COUNTY, MONT.**

A low partly timbered hill grassy on top and on east slope. One of first hills west of Big Hole Valley lying between the wagon roads from Gibbonsville, Idaho, to Wisdom, Mont., and the new Forest Service interstate road from the Bitter Root Valley to the Big Hole Valley. About 6 miles south of the Battle Grounds. Easily reached from the Gibbonsville road. The hill commands a fine view of the entire Big Hole Valley.

Station mark: A tablet set in big boulder buried flush with ground under a large monument and quadripod signal.

Reference mark: A chiseled cross on rock set 14.03 feet north.

[Latitude 45° 35' 02.83". Longitude 113° 44' 51.49'']

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	Log. meters.	Miles.
Big Hole Pass.....	52 17 16.00	232 13 56.00	3.88587	4.778
Rocky.....	93 08 38.00	272 55 29.00	4.37965	14.894
Johnson.....	185 35 12.00	5 36 44.00	4.45356	17.657

**SADDLE MOUNTAIN, RAVALLI COUNTY, MONT.**

On the east knob of Saddle Mountain, on a side ridge about 1 mile north of the Idaho-Montana boundary line, visible from and 12 miles south of Sula, Mont. Easily reached by State-line trail by going west 3 miles from the pass through which the old snow road from the Bitter Root Valley to Salmon River goes.

Station mark: A chiseled cross on solid rock under a rock monument and tree signal.

Reference mark: A tablet set in solid rock 23.95 feet east.

[Latitude 45° 43' 06.60'' Longitude 113° 58' 59.47'']

To station—	Azimuth.	Back azimuth.	Distance.	
			<i>Log. meters.</i>	<i>Miles.</i>
Rocky.....	22 07 09.50	202 04 06.24	4.1687967	9.165
Piquett.....	95 36 34.32	275 27 40.64	4.2093231	10.062
Trapper.....	128 11 34.02	307 58 04.36	4.4910654	19.249
Deer.....	170 52 40.84	350 49 37.25	4.5402883	21.559
Kent.....	200 52 37.45	21 00 47.81	4.6147950	25.594
Shirley.....	201 47 56.74	21 52 01.20	4.2966486	12.303
County line.....	235 47 33.55	56 07 41.73	4.6422064	27.262

**SHIRLEY, RAVALLI COUNTY, MONT.**

On the highest point of a hill at the south edge of thick timber with grassy ridges to the south. The hill is locally known as Shirley Hill and is about 3 miles east and visible from Sula post office. It is easily reached by wood road from Sula via Thompson's ranch. Water and grass near station at Thompson's ranch.

Station mark: Chiseled cross on placed rock under a small rock pile and quadripod signal.

Reference mark: A bronze triangulation tablet cemented in solid rock 45.2 feet south.

[Latitude 45° 53' 01.88'' Longitude 113° 53' 18.49'']

To station—	Azimuth.	Back azimuth.	Distance.	
			<i>Log. meters.</i>	<i>Miles.</i>
Saddle.....	21 52 01.20	201 47 56.74	4.2966486	12.303
Deer.....	141 04 18.27	320 57 09.33	4.3101738	12.692
County line.....	258 49 01.06	78 05 06.01	4.4713759	18.396

**SOUTH PYRAMID, BEAVERHEAD COUNTY, MONT. (Not occupied.)**

The south one of two pyramid-shaped peaks about 6 miles apart and east of the Continental Divide, but considerably higher. The Black Horse mine is somewhere south of peak.

[Latitude 45° 18' 42.18'' Longitude 113° 40' 35.36'']

To station—	Azimuth.	Back azimuth.	Distance.	
			<i>Log. meters.</i>	<i>Miles.</i>
Sal.....	21 39 46.00	201 32 43.00	4.54868	21.980
Bloody Dick.....	302 07 06.00	122 22 12.00	4.51723	20.445

**SULA PEAK, RAVALLI COUNTY, MONT. (Not occupied.)**

On sharp peak south end of timbered ridge about 2 miles west of Sula post office.

Station mark: Dead tree.

62510°—Bull. 644—17—15

[Latitude 45° 51' 38.30". Longitude 113° 59' 55.59".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	<i>Log. meters.</i>	<i>Miles.</i>
Shirley.....	253 11 18.00	73 16 03.00	3.9515	5.555
Saddle.....	335 36 26.00	175 37 06.00	4.19987	9.845

**TORREY MOUNTAIN, BEAVERHEAD COUNTY, MONT. (Not occupied.)**

A very high peak of that name west of Dillon, Mont.

Station mark: Rock monument.

[Latitude 45° 27' 23.59". Longitude 112° 58' 18.95".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	<i>Log. meters.</i>	<i>Miles.</i>
Brenner.....	14 31 03.00	194 23 13.00	4.76430	36.112
Bloody Dick.....	39 20 40.00	219 05 44.00	4.63786	26.991

**TRAPPER, RAVALLI COUNTY, MONT.**

On the highest peak, called Trapper Peak, in the Bitter Root Range, about 15 miles southwest of Darby, Mont. Easily reached from the ridge to the southeast. The best route is to leave the wagon road up South Fork of Bitter Root River at Fuller's ranch at the mouth of Boulder Creek, 1 mile north of South Fork bridge, and follow up the long ridge dividing the waters of Boulder Creek and the main river. Good camping grounds at timber line about half a mile from peak and 1,000 feet lower.

Station mark: A chiseled hole in slanting solid rock under center of a big monument.

Reference mark: A bronze triangulation tablet set in solid rock.

[Latitude 45° 53' 25.46". Longitude 114° 17' 48.74".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	<i>Log. meters.</i>	<i>Miles.</i>
Blue Nose.....	5 49 10.48	185 46 34.85	4.6683359	28.953
356.....	46 38 15.97	226 28 11.38	4.3992043	15.580
Ward (2).....	181 42 32.18	01 43 03.26	4.4923012	19.304
Deer.....	231 04 00.18	51 14 28.10	4.3829476	15.007
Kent.....	243 25 23.35	63 47 06.48	4.6390032	27.062
Saddle.....	307 58 04.36	128 11 34.02	4.4910654	19.249
Rocky.....	329 58 41.61	150 09 06.90	4.5777112	23.500
Piquett.....	334 40 21.98	154 44 57.28	4.2879001	12.057

# WYOMING.

## -TRIANGULATION STATIONS.

### Como Ridge quadrangle.

#### CARBON COUNTY.

During the season of 1915 triangulation was extended north-eastward by George T. Hawkins, from two stations of the United States Geological Survey, Elk and Rock, described in Bulletin 245, in order to control the northeast quarter of the Widdowfield 30' quadrangle.

One old station, Rock, was occupied and the other one, Elk, sighted from three new stations and two stations cut in from three primary stations. Positions are on approximate North American datum.

#### COMO, CARBON COUNTY, WYO.

In sec. 17, T. 22 N., R. 77 W., about 7 miles east of Medicine Bow, on a high, bold ridge locally known as Como Ridge. This station can be reached by driving east along the railroad from Medicine Bow to a point where the road bends sharp toward the south, then follow a dim trail on the south side of the ridge for a mile when one drives up to the station. The station is nearly due south of the east end of Como Lake.

Signal: Tripod of sawed lumber.

Station mark: Tablet in solid rock.

Reference marks: (1) Arrowhead cut in rock, distant 9.9 feet north, 60° east. (2) Arrowhead cut in rock distant 24.3 feet west.

[Latitude 41° 53' 05.70". Longitude 106° 03' 32.51".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	Log. meters.	Miles.
Rock.....	21 06 04.50	200 59 19.99	4.5924583	24.311
Pine.....	41 41 58.33	221 37 32.12	4.1415286	8.608
Derrick.....	49 25 02	229 17 23	4.32168	13.033
Tank.....	96 52 15	276 46 40	4.06681	7.248
Flat.....	136 46 08.71	316 41 16.99	4.1665121	9.117

#### DERRICK, CARBON COUNTY, WYO. (Not occupied.)

A tall oil derrick about 12 miles southwest of Medicine Bow on high ground about 1½ miles north of the Medicine Bow River, in Carbon County.

Signal: Oil derrick.

Station mark: Oil well.

[Latitude 41° 45' 42.88". Longitude 106° 15' 01.99".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	Log. meters.	Miles.
Como.....	229 17 23	49 25 02	4.32168	13.033
Pine.....	243 40 53	63 44 06	3.87402	4.649
Rock.....	335 16 12	175 17 02	4.36045	14.250

**ELK, CARBON COUNTY, WYO.**

A high dome-shaped mountain about 15 miles south of Hanna and about 10 miles west of Elk Mountain post office. The mountain is precipitous with much down-timber, making ascent difficult. The most practicable route is from Rattlesnake Pass on northwest side. At one time there was a trail along this route, but at present only traces are found at intervals. Time required to ascend peak, 6 hours. Summit is above timber line and consequently bald.

Station mark: A cairn about 5 feet in diameter at base and about 6 feet high.

Reference mark: A bronze triangulation tablet cemented in solid rock.

True azimuth from station mark,  $198^{\circ} 19' 22''$ .

Distance, 13.1 feet.

[Latitude  $41^{\circ} 37' 59.46''$ . Longitude  $106^{\circ} 31' 31.76''$ .]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	Log. meters.	Miles.
Flat.....	216 28 25.02	36 42 13.45	4.6823853	29.904
Pine.....	239 07 36.35	59 21 48.15	4.5370357	21.399

**FLAT, CARBON COUNTY, WYO.**

In sec. 9, T. 23 N., R. 78 W., on the west end of a hill locally known as Flat Top, and about 1 mile east and 6 miles north of Medicine Bow. The road from Medicine Bow to the T-B ranch passes close to the east end of the hill and one can drive to within 100 yards of the station.

Signal: Sawed lumber tripod.

Station mark: Survey tablet in solid rock.

Reference marks: (1) Arrowhead chiseled in solid rock pointing to center is 13.5 feet northeast. (2) Arrowhead pointing to center chiseled in solid rock is  $15\frac{1}{2}$  feet south  $30^{\circ}$  west.

[Latitude  $41^{\circ} 58' 51.97''$ . Longitude  $106^{\circ} 10' 49.06''$ .]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	Log. meters.	Miles.
Rock.....	4 48 25.74	184 46 31.64	4.6754542	29.431
Tank.....	9 15 56	189 15 12	3.97398	5.853
Elk.....	36 42 13.45	216 28 25.02	4.6823853	29.904
Como.....	316 41 16.99	136 46 08.71	4.1665121	9.117
Pine.....	357 38 45.00	177 39 10.00	4.3232526	13.080

**MEDICINE BOW TANK, CARBON COUNTY, WYO. (Not occupied.)**

A water tank 110 feet high, completed in July, 1915, and used for city water supply in Medicine Bow, Carbon County.

Signal: Center of tank.

Station mark: Center of tank.

[Latitude  $41^{\circ} 53' 50.64''$ . Longitude  $106^{\circ} 11' 54.84''$ .]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	Log. meters.	Miles.
Flat.....	189 15 12	9 15 56	3.97398	5.853
Como.....	276 46 40	96 52 15	4.06681	7.248
Pine.....	348 31 21	168 32 30	4.07830	7.441

## PINE, CARBON COUNTY, WYO.

Near the west end of ridge where it breaks off in steep bluff, in sec. 16, T. 21 N., R. 78 W. The station is nearly on a line with a wire fence running north and south to the south of the ridge. The station can be reached by wagon, going about 10 miles from Medicine Bow on the Arlington road, then drive to near the top from the south side of ridge.

Signal: Poles and plank.

Station mark: Tablet set in sandstone.

Reference marks: (1) Arrow pointing to center, east, distance 14 feet. (2) Arrow pointing to center S. 70° W. distant 21 feet.

[Latitude 41° 47' 30.27". Longitude 106° 10' 11.61".]

To station—	Azimuth.	Back azimuth.	Distance.	
			<i>Log. meters.</i>	<i>Miles.</i>
Rock.....	10 28 25.66	190 26 06.88	4.4250210	16.534
Elk.....	59 21 48.15	239 07 36.35	4.5370357	21.399
Derrick.....	63 44 06	243 40 53	3.87402	4.649
Tank.....	168 32 30	348 31 21	4.07830	7.441
Flat.....	177 39 10.00	357 38 45.00	4.3232526	13.080
Como.....	221 37 32.12	41 41 58.33	4.1415286	8.608

## ROCK, CARBON COUNTY, WYO.

About 3 miles south of Arlington post office and 1.5 miles east of Rock Creek. The point locally known as Rock Mountain was cleared of timber and a quadripod signal erected on highest point. Can be reached with pack outfit by blind trail from Arlington. On account of windfalls this point is difficult of approach except by trail.

Station mark: A bronze triangulation tablet cemented in solid rock.

[Latitude 41° 33' 22.12". Longitude 106° 13' 40.34".]

To station—	Azimuth.	Back azimuth.	Distance.	
			<i>Log. meters.</i>	<i>Miles.</i>
Derrick.....	175 17 02	355 16 12	4.36045	14.250
Flat.....	184 46 31.64	4 48 25.74	4.6754542	29.431
Pine.....	190 26 06.88	10 28 25.66	4.4250210	16.534
Como.....	200 59 19.99	21 06 04.50	4.5924583	24.311

