

Cupboard 27
Shelf 1
No. 35
1 book

COMPUTATIONS
TOPOGRAPHICAL MEANDERS
AND DATA.

Tomney & Maslow. Topog

sent V. E. Hunt.

No. 142

Party No 2 Col. Section
U. S. ENGINEER OFFICE,

Explorations AND Surveys

West of the 100th Meridian

Now Camp No 2 St. Charles Co. Col.

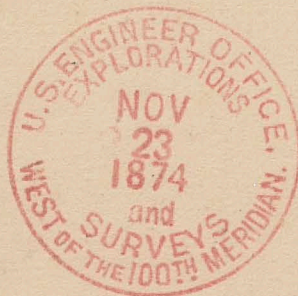
Camp 44 at Fort Union.
TOPOGRAPHICAL DEPARTMENT.

July 28 to Oct. 16 1874

1874

EDWARD DENNY & CO.
STATIONERS,
Account Books Bound and
Printed to order,
512 SACRAMENTO ST.
Bet. Sansome & Leidesdorff
SAN FRANCISCO.

No. 142



No. 4

160 1/2
803

Station: Camp No 2 St Charles

DATE.	NO. OF		DISTANCE BY ODOMETER.	BEARING.		REDUCED DISTANCE.
	CAMPS.	STATION.		MAGNETIC.	TRUE.	
July 28 th	No 1	Start I	382	West.	N 76 W	363
		II ^a	108	S 55 E	S 41 E	108
		III	324	S 31 W	S 45 W	324
		IV	532	S 14 3/4 E	S 3/4 E	532
		V	695	S 15 E	S 1 E	695
		VI	2553	S 13/4 W	S 15 3/4 W	2553
		VII	803	S 2 W	S 16 W	803
		VIII	321	S 15 W	S 29 W	321
		IX	576	S 30 W	S 44 W	527
	No 2		431	South	S 14 W	366
			<u>4101</u>			
			6725			

Done

(First) Ready at Camp No 1 40
" " " " N 2 6765
6725

580 / 6725 | 11.61 miles

58 | 570 | 9.83
522
480
564
160

58 | 201 | 3.46
174
270
232
380

Computer: *Lawrence*

NORTHING.	SOUTHING.	EASTING.	WESTING.	REMARKS.
-87.9	+ 6.4		+ 352.2	Correct number of revolutions per mile <u>Var. 30th</u> 632.3
	+ 81.5	- 70.8		
	310.6			
	229.1	229	0229.0	
	843.6			
	+ 532.0	- 6.9	610	
	1527.6			
	+ 695	- 12.2		
	3994.8			
	2457.2		- 682.9	
	4766.8			
	+ 772.0		- 221.3	
	5087.6			
	+ 280.8		- 155.6	
	5433.3			
	+ 385.7		- 370.5	
	5766.4			
	+ 355.1		- 88.6	
87.9	5808	90.0	2101.2	
	5700		2030	in Revol.
	5700		2010	
	1900			
	9.83	approx	2.46	for 14° Var.
	<u>9.79</u>		<u>3.62</u>	for 15° Var.

The above data in miles is approximate as the exact number of revolutions per mile has not been well enough established

Station: Camp 4 Greenhorn River July 30

DATE.	NO. OF		DISTANCE BY ODOMETER.	BEARING.		REDUCED DISTANCE.
	CAMPS.	STATION.		MAGNETIC.	TRUE.	
July 29 th	N ^o 2	I	535	S 12 1/2 W	S 27 1/2 W	500
		II	1898	S 20 W	S 35 W	1860
		II ^a	620	S 6 1/2 W	S 21 1/2 W	620
		III	380	S 20 W	S 35 W	380
		IV	520	South	S 15 W	500
		V	368	S 5 E	S 10 W	360
		VI	551	S 25 W	S 40 W	540
		VI ^a	199	S 20 E	S 5 E	199
		VII	1234	S 20 W	S 35 W	1234
		VIII	2018	S 30 W	S 45 W	1917
		VIII ^a	314	S 37 1/2 W	S 52 1/2 W	314
		IX	900	S 54 W	S 69 W	880
	N ^o 3		328	S 35 W	S 50 W	328
			9865			

$$580 \overline{) 9865} = 17.009 \text{ miles}$$

$$\begin{array}{r} 580 \overline{) 7387.0} \\ \underline{580} \\ 158 \\ \underline{116} \\ 427 \\ \underline{406} \\ 216 \\ \underline{272} \end{array}$$

$$580 \overline{) 5650} = 9.74$$

$$\begin{array}{r} 580 \overline{) 5650} \\ \underline{522} \\ 430 \\ \underline{406} \\ 240 \end{array}$$

Computer:

Somme

mitak

NORTHING.	SOUTHING.	EASTING.	WESTING.	REMARKS.
	Rev.		Rev.	
	+ 443.5		- 230.9	
	1523.7		-1066.9	
	+ 576.9		- 227.2	
	+ 311.3		- 218.0	
	+ 483.0		- 129.4	
	+ 354.5		- 62.5	
	+ 413.7		- 347.1	
	+ 198.2	- 17.4	17.4	
	1011.0		- 707.8	
	1355.5		1355.5	
	- 191.1		+ 249.1	
	- 315.4		+ 821.6	
	- 210.8		+ 251.3	
	4287.6	17.4	5667.3	
	12.74 ^{mts}		5649.9	
			9.74 ^{mts}	
			9.10	
			22.6	

Station: *Camp No 4 Greenhorn July 30^c*

DATE.	NO. OF		DISTANCE BY ODOMETER.	BEARING.		REDUCED DISTANCE.
	CAMPS.	STATION.		MAGNETIC.	TRUE.	
July 30 ^c	No 3	No 3 ^a	293	530W	545 1/2 W	293
		I	73	537E	521 1/2 E	72
		II	813	55E	510 1/2 W	790
		III ^a	815	54W	519 1/2 W	700
		III	284	54W	519 1/2 W	290
		IV	707	535E	519 1/2 E	707
		V	2103	532E	516 1/2 E	2103
		VI	1314	527E	511 1/2 E	1260
		VI ^a	475	537 1/2 E	522 E	475
		VI ^b	967	556E	540 1/2 E	967
		VII	880	520E	54 1/2 E	815
			No 4		356	515W
			<u>8730</u>			

$$\begin{array}{r}
 580 \overline{) 8730} / 15.005 \\
 \underline{580} \\
 293 \\
 \underline{290} \\
 3000
 \end{array}$$

$$\begin{array}{r}
 580 \overline{) 7912.8} / 13.64 \\
 \underline{580} \\
 211 \\
 \underline{174} \\
 372 \\
 \underline{348} \\
 248 \\
 \underline{232}
 \end{array}$$

$$\begin{array}{r}
 580 \overline{) 992.3} / 1.71 \\
 \underline{580} \\
 412 \\
 \underline{406} \\
 63
 \end{array}$$

$$\begin{array}{r}
 6323 \overline{) 7912.8} / 12.5 \\
 \underline{6323} \\
 15898 \\
 \underline{12646} \\
 32520 \\
 \underline{615}
 \end{array}$$

Computer: *Sommer*

NORTHING.	SOUTHING.	EASTING.	WESTING.	REMARKS.
	<i>Revolutions</i>			
	-205.4		+208.9	
+67.0		-26.4	26	
+776.8			-144.0	
+659.8			-233.7	
+254.5			-90.1	
+666.4		-236.0	236.0	
12016.9		596.9	5	
+1234.8		-251.0		
+440.4		-78.0		
+583.3		-498.2		
+712.8		-56.1		
+294.7			-73.6	
<hr/>			<hr/>	
7912.8		17.426	750.3	
		<hr/>	<hr/>	
		992.3		
	13.64 ^{mls}	1.71 ^{mls}		

53 / 1736 / 27.6
476
461
55

Station: Camp 7 Trinidad Aug. 2nd

DATE.	NO. OF		DISTANCE BY ODOMETER. <small>in Rev.</small>	BEARING. <small>15'4</small>		REDUCED DISTANCE.
	CAMPS.	STATION.		MAGNETIC.	TRUE.	
July 31 st	Hurricane Riv. N ^o 4 to I		462	S 70 E	S 54 3/4 E	453
		T ^a	845	S 53 E	S 37 3/4 E	828 ✓
		II	978	S 70 E	S 54 3/4 E	958 ✓
		III	532	S 40 E	S 24 3/4 E	527 ✓
		III ^a	354	S 64 E	S 48 3/4 E	354 ✓
		III ^b	842	S 45 E	S 29 3/4 E	842 ✓
		IV	709	S 66 E	S 50 3/4 E	674 ✓
		V	743	S 30 E	S 14 3/4 E	713 ✓
		V ^a	263	S 70 E	S 54 3/4 E	263 ✓
		VI ^a	659	S 25 E	S 9 3/4 E	646 ✓
		VII	1525	S 25 E	S 9 3/4 E	1464 ✓
		VIII	433	S 56 E	S 40 3/4 E	430 ✓
		VIII ^a	340	S 69 E	S 53 3/4 E	340 ✓
		IX	383	S 62 1/2 E	S 47 1/4 E	383 ✓
		IX ^o	942	S 46 E	S 30 3/4 E	904 ✓
		X	337	S 10 E	S 5 1/4 W	312 ✓
		X ^a	93	S 13 W	S 28 1/4 W	93 ✓
		XI	373	S 15 E	S 1/4 W	373 ✓
		XII	450	S 20 E	S 4 3/4 E	432 ✓
		XIII	972	S 40 E	S 24 3/4 E	462
	N ^o 5		200	S 40 E	S 24 3/4 E	200
			12435 Rev.			
			21.44	mils		

Computer: *Soumer*

NORTHING.	SOUTHING.	EASTING.	WESTING.	REMARKS.
		5464.9		
	- 361.4	+ 370.0		
	+ 647.0	- 506.9		
	- 553.9	+ 782.3		
	+ 278.6	- 220.6		
	- 233.4	+ 266.1		
	+ 731.0	+ 417.8		
	- 429.7	+ 516.6		
	+ 689.5	- 181.6		
	- 151.8	+ 214.8		
	+ 636.7	- 109.4		
	+ 1443.1	- 247.8		
	+ 325.8	- 280.7		
	- 201.0	+ 274.7		
	- 278.3	+ 301.0		
	+ 726.9	- 462.2		
	+ 310.7	281.4	- 28.6	
	+ 81.9		- 44.0	
	+ 373.0		- 1.6	
	+ 430.5	- 35.8	<u>74.2</u>	
	+ 419.5	- 193.4		
	+ 181.6	- 83.7		
	<u>9685.3</u>	<u>5390.7</u>		
	16.70	9.30		

Station: Camp No 7 Trinidad Aug 2nd

DATE.	NO. OF		DISTANCE BY ODOMETER.	BEARING.		REDUCED DISTANCE.
	CAMPS.	STATION.		MAGNETIC.	TRUE.	
Aug 1 st	No 5		910	530 E	514 3/4 E	890
		II	528	537 1/2 E	522 1/4 E	528
		III	1705	532 E	516 3/4 E	1680
		IV	1181	542 E	526 1/4 E	1160
		V	1617	551 E	535 3/4 E	1560
		VI	93	520 E	54 3/4 E	93
		VI ^a	323	518 E	52 1/4 E	323
		VII ^b	806	533 E	517 1/4 E	806
		VIII	726	515 E	5 1/4 W	712
		VIII ^a	897	540 E	524 3/4 E	890
		IX	1059	520 E	54 3/4 E	1040
		IX ^a	700	554 E	538 3/4 E	686
		X	910	560 E	544 3/4 E	880
	No 6		839	544 E	528 3/4 E	825
			<u>12294</u>			

21.20^{mls}

580/12294/21.197
 116
 69
 58
 114
 58
 560
 522
 380

58/108820/18.76
 58
 508
 464
 447
 436
 364
 348
 160

58/4514/7.98
 406
 454
 468
 480
 464
 160

Computer: *Tommer*

NORTHING.	SOUTHING.	EASTING.	WESTING.	REMARKS.
	+ 860.7	- 226.6		
	+ 488.7	- 199.9		
	+ 1608.6	- 484.1		
	+ 1035.6	- 522.1		
	+ 1265.7	- 911.1		
	+ 92.9	- 7.7		
	+ 322.6	- 15.5		
	+ 767.6	- 245.7		
	+ 712.0		- 39.1	
	+ 808.2	- 372.6		
	+ 1036.5	- 86.1		
	+ 535.0	- 429.4		
	+ 625.0	- 619.5		
	+ 723.3	- 396.8		
	<hr/>			
	10882.4	4517.1	3.1	
		4514.0		
	^{ms} 18.76	^{ms} 7.78		

Station: Camp N^o 7 Trinidad Aug 2nd

DATE.	NO. OF		DISTANCE BY ODOMETER.	BEARING.		REDUCED DISTANCE.
	CAMPS.	STATION.		MAGNETIC.	TRUE.	
Aug 2 nd = N ^o 6		I	1456	S 45 E	S 30 1/4 E	1430
		II	854	S 42 E	S 27 1/4 E	820
		III	898	S 30 E	S 15 1/4 E	850
		IV	628	South	S 14 3/4 W	580
		V	652	S 4 E	S 10 3/4 W	640
		VI	754	S 4 E	S 10 3/4 W	730
	N ^o 7		1042	South	S 14 3/4 W	980
			<u>6284</u>			

10.83^{miles}

633 / 6284
 5697
 5870

99

58 / 628.4 / 10.83

58
 484
 464
 200
 11.4

58 / 5638.9 / 9.72

5228
 418
 406
 129

58 / 666.7 / 1.15

58
 86
 58
 287
 210

Computer: *Tommer*

NORTHING.	SOUTHING.	EASTING.	WESTING.	REMARKS.
	^{36.38} +1233.2	^{50.38} -720.4		
	+729.0	-375.5		
	+820.1	-223.6		
	+560.9		-147.7	
	+628.8		-119.4	
	+717.2		-136.2	
	+947.7		-249.5	
	<hr/> 5638.9	1319.5	652.8	
		<hr/> 666.7		
	^{mbs} 9.72	^{mbs} 1.15		

Line to connect Camps No 7 & No 59
at Trinidad with the
Astronomical Monument,

Camp 59 to X S50W 63 rev.
X to Camp 7 N33W 15.8"
Camp 7 to Mount N7 1/2 E 800 v

X ^{2 1/2} v

N 12 1/4 ✓

$$\begin{array}{r} 315 \\ 270 \\ \hline 1)585 \\ 292 \end{array}$$

Station: *Camp No 7 Trinidad*

DATE.	NO. OF		DISTANCE BY ODOMETER.	BEARING.		REDUCED DISTANCE.
	CAMPS.	STATION.		MAGNETIC.	TRUE.	
July 28 th	No 1	No 2	11.61	South	S 45 W.	11
July 29 th	No 2	No 3	17.01			
July 30 th	No 3	No 4	15.00			
July 31 st	No 4	No 5	21.44			
Aug. 1 st	No 5	No 6	21.20			
Aug 2 nd	No 6	No 7	10.83			
			<u>97.09</u>			

Pueblo to Trinidad

97.09 mls.

Pueblo

by Dr. Kauff 38° 15' 42".80
by Ruffner 104° 36' 47".4

Trinidad

37° 10' 46.5
104° 30' 01.3

Computer: *Sommer*

NORTHING.	SOUTHING.	EASTING.	WESTING.	REMARKS.
	8.98 miles		3.32	
	1.88		3.43	Var. 15° at 1
	4.68		8.93	Var. 15° 09' [5 mi]
	12.74	1.57	9.74	Var. 15° 1/4
	12.51	1.71		
	13.64	8.53		
	15.81	9.30		
	16.70	7.13		
	17.20	7.78		
	18.76	1.05		
	8.91	1.15		
	9.72			
	<u>74.59</u>	1918.29	12.36	
	81.35	7.58	12.25	
		18.04		
Pueblo to Trinidad				
South	81.35	East	6.58	
	74.63		6.91	

632.3 / 58000
 10950
 6523
 46070
 44216
 18090

9175
 9179
 82557
 64211
 22557
 8980

Lat. & Dep. betw. Pueblo & Trinidad
 by computation from Astr. Observ.
 74.63 6.23¹³

which makes the number of revolve per mile
 632.3 & not 580, as stated by
 Mr. Bates, who rode odometer over Base
 in Pueblo.

Station: No 7 on Purgatoire River, Trinidad.

DATE.	NO. OF		DISTANCE BY ODOMETER.	BEARING.		REDUCED DISTANCE.
	CAMPS.	STATION.		MAGNETIC.	TRUE.	
Aug 5	7	I	158	S 32 E	S 16 3/4 E	158
		II	553	S 8 W	S 23 1/4 W	530
		III	438	S 15 E	S 7 1/4 W	434
		IV	698	S 14 W	S 29 1/4 W	664
		V	1172	S 5 E	S 9 1/4 W	1114
		VI	270	S 21 E	S 5 3/4 E	260
		VII	440	S 44 E	S 28 3/4 E	430
		VIII	255	S 7 1/2 E	S 7 1/2 W	253
		IX	155	S 33 W	S 48 1/4 W	152
		X	1234	S 13 E	S 2 1/4 W	1136
		XI	474	S 25 W	S 40 1/4 W	450
		XII	401	S 15 E	S 7 1/4 W	390
		XIII	1685	S 40 E	S 24 3/4 E	1685
		XIV	170	E	S 74 1/2 E	170
		XV	315	S 70 E	S 54 3/4 E	315
		XVI	460	S	S 15 1/4 W	455
		XVII	264	S 16 E	S 3 1/4 E	265
	No 8		228	S 51 E	S 35 3/4 E	226

633) 8419
 6338
 2081
 11890

133

952

Computer: Maxson

NORTHING.	SOUTHING.	EASTING.	WESTING.	REMARKS.
	157.3	457.5		
74.20	487.		209.2	
	434.		1.9	
	579.3		324.4	
	1099.8		179.2	
	258.7	26.0		
	377.0	20.6.8		
	250.7		34.1	
	101.2		113.4	
	1135.0		44.6	
	343.5		290.8	
	390.0		1.7	
	1530.2	705.6		
	44.7	164.0		
	181.7	257.3		
	439.1		119.5	
	265.	2.9		
	181.3	132.2		
	8249.5	1540.3	1318.8	
		221.5		
	14.72m	0.38m		

Station: Camp No 8. Ratum Pass Aug. 6th

DATE.	NO. OF		DISTANCE BY ODOMETER.	BEARING.		REDUCED DISTANCE.
	CAMPS.	STATION.		MAGNETIC.	TRUE.	
Aug 6	8	I	117	S 16 E	S 1 E	113
		II	182	S	S 15 W	173
		III	57	S 25 E	S 10 E	57
		IV'	273	S 18 W	S 33 W	260
		V'	321	S 7 E	S 8 E	315
		VI'	605	S 53 E	S 38 E	580
		VII	551	S 25 E	S 10 E	525
		VIII'	1015	S 40 E	S 25 E	955
		IX'	608	S 60 E	S 45 E	560
		XII	810	S 50 E	S 35 E	760
		XIII	307	S 55 E	S 40 E	260
		IX ^a	2922	S 7 E	S 8 W	2922
		X'	1120	S 15 E	S	1110
		Aug			52	S 9 E

4846
 952
 5798
 5297
 10110
 633
 3770

4098
 3798
 3000

Computer: Mayson

NORTHING.	SOUTHING.	EASTING.	WESTING.	REMARKS.
	113.0	21.4		
	167.1		44.8	
	56.1	9.9		
	278.1		141.6	
	312.0	43.8		
	457.	357.1		
	517.	91.2		
	865.5	403.6		
	396.	396.		
	622.6	435.9		
	199.2	167.1		
	2893.8		407.1	
	1110.0			
	<u>53.7</u>	<u> </u>	<u>5.6</u>	
	7981.1	<u>1907.0</u>	599.1	
		1307.9		
	13.8 miles	2.3 miles		

Station: Camp No 9 blifton on Canadian River Aug

DATE.	NO. OF		DISTANCE BY ODOMETER.	BEARING. ^{14 3/4}		REDUCED DISTANCE.
	CAMPS.	STATION.		MAGNETIC.	TRUE.	
Aug 7	No 9	I	109	S 18 W	S 32 3/4 W	109
		II	1241	N 80 W	N 65 1/4 W	1180
		III	674	N 56 W	N 41 1/4 W	674
		IV	310	N 45 W	N 30 1/4 W	204
		V	883	N 45 W	N 30 1/4 W	850
		VI	1097	W	N 75 1/4 W	1057
		VII	1317	N 60 W	N 45 1/4 W	1262
		VIII	237	S 65 W	S 79 3/4 W	226
		IX	353	N 30 W	N 15 1/4 W	330
		X	570	N 70 W	N 55 1/4 W	525
		XI	1415	N 86 W	N 71 1/4 W	1360
	10		597	W	N 75 1/4 W	570
			8803			
			13.9 685			
			2473			
			1699			
			5740			

7 Computer: Maxson

NORTHING.	SOUTHING.	EASTING.	WESTING.	REMARKS.
-----------	-----------	----------	----------	----------

91.7

59.0

494.5

1071.7

506.7

444.4

176.2

102.8

734.3

428.2

269.1

1022.1

888.7

896.0

40.2

222.4

318.4

86.8

299.2

431.4

437.3

1287.8

145.1

551.2

4269.5

131.9

6603.8

4137.6

7.1 miles

11.4 m.

Station: Camp No 10 in Cañon of Canadian River Aug 8.

DATE.	NO. OF		DISTANCE BY ODOMETER.	BEARING.		REDUCED DISTANCE.
	CAMPS.	STATION.		MAGNETIC.	TRUE.	
Aug 8	No 10	I	331	N 80 W	N 65 ³ / ₄ W	325
		II	458	W	N 75 ³ / ₄ W	440
		III	1432	N 78 W	N 63 ³ / ₄ W	1350
		IV	815	S 60 W	S 74 ³ / ₄ W	780
		V	846	S 70 W	S 80 ³ / ₄ W	800
		VI ^a	433	S 60 W	S 74 ³ / ₄ W	415
		VII	649	S 85 W	N 80 ¹ / ₄ W	637
		VIII	1366	W	N 75 ¹ / ₄ W	1320
		IX	1086	N 85 W	N 70 ¹ / ₄ W	1065
		X	417	W	N 75 ¹ / ₄ W	417
					<u>7833</u>	
			623			
			1503			
			<u>1266</u>			
			2370			
	12.4					

W-Dodhunts 11

Computer: Maxson

NORTHING.	SOUTHING.	EASTING.	WESTING.	REMARKS.
136.1			295.1	
112.0			425.5	
607.6			1205.5	
	205.2		752.5	
	73.2		796.6	
	109.1		400.4	
107.9			627.8	
263.0			998.9	
359.9			1002.4	
<u>106.2</u>			<u>403.3</u>	
1692.7	387.5		6908.0	
1305.2				
2.3 miles			11.9 miles	

Station: Camp No 11 at Godhunter's Ranch on Canadian Aug

DATE.	NO. OF		DISTANCE BY ODOMETER.	BEARING.		REDUCED DISTANCE.
	CAMPS.	STATION.		MAGNETIC.	TRUE.	
Aug 9 th	11	I	1588	N 75 W	N 60 1/4 W	1588
		II	1043	S 42 W	S 56 3/4 W	1033
		II ^a	192 192	N 45 W	N 30 1/4 W	192
		III	144	S 12 W	S 26 3/4 W	143
		III ^a	266	S 36 W	S 50 3/4 W	266
		IV	177	S 10 W	S 24 3/4 W	177
		IV ^a	277	S 40 E	S 25 1/4 W	277
		V	663	S 30 W	S 44 3/4 W	610
		V I	814	S 20 W	S 34 3/4 W	782
		V II	340	S 22 W	S 36 1/4 W	333
		V III	535	S 8 W	S 22 1/4 W	520
		V III ^a	77	S 34 W	S 48 3/4 W	74
		IX	388	S 45 E	S 9 3/4 W	373
X	945	S 20 E	S 5 1/2 E	925		
X I	267	S 45 E	S 30 1/4 E	255		
X I ^a	367	S 23 E	S 8 1/4 E	340		
X II	321	S 38 E	S 23 1/4 E	300		
X III	855	S 18 E	S 3 1/4 E	810		
12			148	S 66 1/2 E	S 51 1/4 E	148
	149		9407			
			633			
			3077			
			2532			
			5910			9146

9 Computer: Maxson

NORTHING.	SOUTHING.	EASTING.	WESTING.	REMARKS.
787.7			1378.4	
	566.4		863.9	
165.9			96.7	
	127.7		64.4	
	168.3		206.0	
	160.7		74.1	
	250.5		118.2	
	440.6		421.8	
	642.5		445.7	
	266.8		199.2	
	479.5		201.1	
	48.8		55.6	
	367.7		63.2	
	921.1	89.2		
	220.3	128.4		
	336.5	48.8		
	275.6	118.4		✓
	808.7	45.9		
	91.6	116.2		
953.6	6173.3	546.9	4188.3	
	5219.7		3641.4	
	9.0 miles		6.3 miles	

Station: Camp No 12 Juan Gabriel's on Yunque R. Aug 10

DATE.	NO. OF		DISTANCE BY ODOMETER.	BEARING.		REDUCED DISTANCE.
	CAMPS.	STATION.		MAGNETIC.	TRUE.	
Aug 10	12	I	1701	S 60 E	S 45 ³ / ₄ E	1684
		II	1056	S 84 E	S 39 ¹ / ₄ E	1026
		III	205	S 75 E	S 60 ¹ / ₄ E	197
		III ^a	193	S 30 E	S 15 ¹ / ₄ E	193
		IV	215	S 86 E	S 71 ¹ / ₄ E	205
		V	204	S 57 E	S 42 ¹ / ₄ E	200
		VI	2061	S 60 E	S 45 ¹ / ₄ E	1021
		VII	580	S 31 E	S 16 ¹ / ₄ E	570
		VII ^a	236	S 37 ¹ / ₂ E	S 22 ³ / ₄ E	230
		VIII	236	N 81 E	S 84 ³ / ₄ E	226
13			123	S 48 E	S 33 ¹ / ₄ E	123
	92		5810			
			5697			
			1113			

Computer: Maxson

NORTHING.	SOUTHING.	EASTING.	WESTING.	REMARKS.
	1185.1	1195.7		
	794.5	649.2		
	97.7	171.0		
	186.2	50.8		
	65.9	194.1		
	148.	134.5		
	718.8	725.1		
	547.2	159.5		
	212.1	88.9		
	27.5	224.9		
	<u>102.9</u>	<u>67.3</u>		
	4080.9	3661.0		

7.0 miles 6.3 miles

Station: Camp No 13 Termejo River Aug 11th

DATE.	NO. OF		DISTANCE BY ODOMETER.	BEARING.		REDUCED DISTANCE.		
	CAMPS.	STATION.		MAGNETIC.	TRUE.			
Aug 11	13	T ³	53	S 38 E	S 23 1/4 E	53		
		I	296	S 20 W	S 44 3/4 W	290		
		I ^a	161	S 54 W	S 68 3/4 W	161		
		II	398	S 75 E	S 60 1/4 E	382		
		II ^a	137	S 10 W	S 24 3/4 W	134		
		III	172	S 85 E	S 70 1/4 E	154		
		III ^a	239	S 25 W	S 39 3/4 W	239		
		IV	119	S 21 E	S 6 1/4 E	115		
		V	620	S 30 E	S 15 1/4 E	550		
		V ^a	150	S 5 E	S 14 3/4 W	147		
		VI	323	S 62 1/2 E	S 47 3/4 E	323		
		Aug 13		VII	626	S 17 E	S 27 1/4 E	626
				VIII	153	S 37 E	S 22 1/4 E	151
				IX	340	S 80 E	S 65 1/4 E	330
IX ^a	170			S 24 E	S 9 1/4 E	169		
X	272			S 51 E	S 36 1/4 E	267		
XI	408			S 57 1/2 E	S 36 3/4 E	404		
XII	612			S 27 1/2 E	S 12 3/4 E	612		
XIII	340			S 42 1/2 E	S 27 1/4 E	340		
XIII ^a	323			S 39 1/2 E	S 24 3/4 E	323		
XIV	119			S 43 W	S 57 3/4 W	119		

Summer became sick on the 11 Aug. and the remainder from Station VII was done by Mayson Aug 13. The odometer was not out, the distances between time and returned to same readings 11 am 5 880 revolutions 70.46

9.5
6041
5697
3440

Camp ~~VII~~

Computer: Maxson

NORTHING.	SOUTHING.	EASTING.	WESTING.	REMARKS.
	48.7	20.9		
	206.0	205.2	205.2	
	58.4		150.0	
	189.6	331.6		
	121.7		56.2	
	55.5	154.4		
	183.7		151.9	
	117.3	12.9		
	559.6	152.6		
	142.2		37.4	
	217.2	239.1		
	625.5	24.5		
	139.7	57.2		
	138.2	299.7		
	166.8	27.3		
	215.4	157.8		
	323.7	241.7		
	601.	135.		
	300.9	158.3		
	293.3	135.3		
	<u>64.0</u>		<u>101.5</u>	
	4768.4	2148.3	702.2	
		1446.1		
	8.2 miles	2.5 m		

Cross Creek

Station: Camp No 9 Red-River Aug 7 1874.

DATE.	NO. OF		DISTANCE BY ODOMETER.	BEARING.		REDUCED DISTANCE.	
	CAMPS.	STATION.		MAGNETIC.	TRUE.		
Aug 7	No 9	I	714	S 10 W	S 24 3/4 W	714	
		II	748	S 17 1/4 W	S 32 W	748	
		III	1700	S 25 W	S 39 3/4 W	1700	
		IV	340	S 17 W	S 31 3/4 W	340	
		IV ^a	2006	S 35 N	S 49 3/4 W	2006	
		Stage Station	V	850	S 50 W	S 64 3/4 W	850
		V ^a	290	S 19 W	S 33 3/4 W	290	
		VI	1566	N 28 W	N 13 1/4 W	1566	
		VII	348	N 28 W	N 13 1/4 W	340	
		VIII	580	N 34 W	N 19 1/4 W	580	
		IX	580	N 42 W	N 28 1/4 W	575	
		Aug 8		X	725	N 87 W	N 72 1/4 W
XI	737 737			N 65 W	N 60 1/4 W	710	
XII	377			N 42 W	N 28 1/4 W	365	
XIII	348			N 24 W	N 9 1/4 W	336	
XIV	87			N 45 W	N 40 1/4 W	87	
XV	580			N	N 14 1/4 E	560	
XVI	638			N 40 W	N 25 1/4 W	608	
XVII	290			W	S 75 1/4 W	268	
XVIII	290			N 78 W	N 63 1/4 W	268	
XIX	1508			N 10 W	N 43 1/4 E	1490	
XX	435			N 20 E	N 34 3/4 E	427	
XXI	435			N 36 E	N 50 3/4 E	427	
			16060				

Computer: *Mutson*

NORTHING.	SOUTHING.	EASTING.	WESTING.	REMARKS.
	653.6		287.5	
	634.4		396.3	
	1307.0		1087.0	
	289.1		178.9	
	1295.9		1530.6	
	362.6		768.8	
	241.1		161.1	
1494.0			352.0	
330.9			77.9	
547.6			191.2	
506.8			272.2	
221.0			690.5	
352.3			616.4	
321.5			172.8	
331.6			54.0	
66.4			56.2	
541.5		142.6		
529.9			259.3	✓
	68.2		259.1	
120.6			239.3	
1484.7		123.5		
350.9		248.4		
<u>270.1</u>	<u> </u>	<u>331.6</u>	<u> </u>	
7489.8	4851.9	840.6	7651.1	

Station: Preceding Cont. Crow Creek.

DATE.	NO. OF		DISTANCE BY ODOMETER.	BEARING. ^{103/4}		REDUCED DISTANCE.
	CAMPS.	STATION.		MAGNETIC.	TRUE.	
			16060			
		XVIII	435	N. 30 E	N 44 3/4 E	427
		XIX	580	N 45 E	N 59 3/4 E	560
		XX	967	N 65 E	N 79 3/4 E	940
		XXI	232	N 72 E	N 86 3/4 E	230
		XXII	580	N 85 E	S 80 1/4 E	565
		XXIII	232	N 72 E	N 86 3/4 E	228
			19086			
			32.9			

Computer: Maxson

NORTHING.	SOUTHING.	EASTING.	WESTING.	REMARKS.
7489.8	4851.9	840.1	7651.1	The distances on this and the preceding page were taken in time those to station I ^a were computed as 17 min. to a mile, with no reduction, as the road was straight, and traveling good. The remainder were taken 20 minutes to a mile & reduction made as found best. The trail being poor & crooked.
303.3		290.7		
282.1		483.7		
167.3		925.0		
13.0		229.6		
	95.7	556.8		
<u>13.0</u>	<u> </u>	<u>227.6</u>	<u> </u>	
8268.5	4947.6	3553.5	17657.1	
3320.9			4097.6	
5.7 miles			7.1 miles	

Station: Camp 12, Mandu from Elizabeth road.

DATE.	NO. OF		DISTANCE BY ODOMETER.	BEARING.		REDUCED DISTANCE.
	CAMPS.	STATION.		MAGNETIC.	TRUE.	
Aug 9	12	I	272	N 67 W	N 52 W	267
		II	680	N 56 W	N 41 W	650
		III	488	N 44 W	N 29 W	400
		IV	<u>340</u>	N 50 W	N 35 W	330
				1700		
			393 m			

Computer: Maxson.

NORTHING.	SOUTHING.	EASTING.	WESTING.	REMARKS.
164.4			210.4	Meandered on foot.
490.6			426.4	Sommer being sick.
376.1			208.5	3 1/2 miles an hour
<u>270.3</u>			<u>189.3</u>	
1301.4			1034.6	
2.3 m			1.8. miles	

Plotted

✓

Station: III of Summer Aug 10 1874. Into and down the Colinas

DATE.	NO. OF		DISTANCE BY ODOMETER.	BEARING.		REDUCED DISTANCE.
	CAMPS.	STATION.		MAGNETIC.	TRUE.	
Aug 10	Sta III	I	204	N 25 W	N 10 W	204
		II	408	N 9 W	N 6 E	408
		III	748	N 2 E	N 17 E	748
		IV	408	N 35 E	N 50 E	400
		V	204	N 54 E	N 69 E	202
		IX	680	S 50 E	S 35 E	660
		X	510	S 70 E	S 55 E	490
		XI	612	S 22 E	S 7 E	612
		XII	680	S 13 W	S 28 W	680
		XIII	<u>476</u>	S 1 E	S 14 W	476
			4930			
		V - VI	408	N 38 W	N 23 W	400
		VII	102	N	N 15 E	99
		VIII	<u>680</u>	N 26 W	N 11 W	660
		I	1190			

10.55 m

Computer: Max Sm

NORTHING.	SOUTHING.	EASTING.	WESTING.	REMARKS.
200.9			35.4	Distances measured in time 17 minutes to 1 mile.
405.8		42.6		
715.3		218.7		
257.1		306.4		
72.4		188.6		
	540.6	378.6		
	281.1	401.4		
	607.5	74.5		
	600.4		319.2	
	461.8		115.2	
1651.5	2491.4	1610.8	469.8	Plotted.
	839.9	1141.0		
	1.4 miles	2 miles		
368.2			156.3	
95.6		25.6		
647.9			125.9	
1111.7		25.6	282.2	
			256.6	
1.9 m			.4 miles	

Station: III of Summer Aug 11th 1874. to and from Salt Lake Canon

DATE.	NO. OF		DISTANCE BY ODOMETER.	BEARING.		REDUCED DISTANCE.
	CAMPS.	STATION.		MAGNETIC.	TRUE.	
Aug 11	Sta III	I	261	N 5 E	N 20 E	261
		II	58	N 50 E	N 65 E	58
		III	232	N 19 W	N 4 W	230
		IV	58	N 85 E	S 80 E	58
		V	406	N 42 E	N 57 E	394
		VI	377	N 13 E	N 28 E	366
		VII	232	N	N 15 E	228
		VIII	435	N 50 E	N 65 E	420
		IX	435	N 10 W	N 5 E	427
		X	145	N	N 15 E	137
		XI	232	N 44 W	N 29 W	223
		XII	580	N 44 E	N 59 E	580
		XIII	232	N 29 W	N 14 W	232
		XIV	116	N 65 E	N 80 E	112
		XV	174	N 75 E	N E	170
		XVI	580	E	S 75 E	570
		XVII	232	S 45 E	S 30 E	210
		XVIII	348	S 15 E	S	314
		XIX	377	S 32 E	S 17 E	377
		XX	348	S	S NW	348
		XXI	435	S 15 W	S 30 W	435
		XXII	319	S 22 E	S 7 E	316
		XXIII	261	S 42 E	S 27 E	256
			6873			

Computer: *Maxson*

NORTHING.	SOUTHING.	EASTING.	WESTING.	REMARKS.
245.2		89.2		<i>Distances measured in time 20 minutes to a mile.</i>
24.5		52.6		
229.4			16.0	
	10.1	57.1		
214.6		320.5		
323.2		172.7		
220.2		59.0		
177.5		380.6		
425.4		37.2		
132.9		33.2	<i>Cor 14°</i>	
195.0			108.2	
298.7		497.2		
225.1			56.1	<i>Plotted</i>
23.1		110.3		
		170.0		
	147.5	550.6		
	181.9	105.0		
	314.0			
	360.5	110.3		
	336.		90.1	
	376.7		217.5	
	313.7	38.5		
<hr/>	228.2	116.2	<hr/>	
2734.8	2258.5	2910.2	487.9	

Station: Preceding page cont'd

DATE.	NO. OF		DISTANCE BY ODOMETER.	BEARING.		REDUCED DISTANCE.
	CAMPS.	STATION.		MAGNETIC.	TRUE.	
			6873			
		XXIV	406	S 16 E	S 1 E	402
		XXV	348	S 49 E	S 34 E	342
		XXVI	72	S	S 15 W	70
		XXVII	72	S 20 W	S 45 W	68
		XXVIII	580	S 45 E	S 30 E	520
		XXIX	203	S 45 E	S 30 E	195
		XXX	1160	S 27 E	S 12 E	928
		XXXI	232	S	S 15 W	220
		XXXII	435	S 10 W	S 25 W	415
		XXXIII	145	S 45 W	S 60 W	136
		XXXIV	319	S 30 W	S 45 W	319
Aug 13		XXXV	667	S 4 W	S 19 W	660
		XXXVI	667	S 23 E	S 8 E	667
	14		<u>580</u>	S 38 W	S 53 W	580
			12759			
		a	899	W	N 70 W	899
		b	145	S 24 W	S 34 W	140
		c	<u>290</u>	S	S 15 W	290
			1334			

Computer: *Mapson*

NORTHING.	SOUTHING.	EASTING.	WESTING.	REMARKS.
2734.8	2258.5	2910.2	487.9	
	401.9	.7		
	283.6	191.2		
	67.6		18.1	
	48.0		48.0	
	450.3	260.0		
	168.8	97.5		
	907.7	193.0		
	212.5		56.9	
	376.1		175.4	
	68.0		117.8	
	219.2		219.2	
	624.0		214.9	
	660.5	92.9		
	<u>349.1</u>		<u>463.2</u>	
2734.8	7095.8	3745.5	1801.4	
	4361.0	1944.1		
	7.5 miles	3.3 miles		
232.7			868.3	
	108.8		88.1	
	<u>183.5</u>		<u>49.2</u>	
232.7	292.3		1005.6	
	59.6			
	1 mile		1.9 mile	

Plotted

Station: Camp 14, Kennebec River to Camp 15 Van Buren's

DATE.	NO. OF		DISTANCE BY ODOMETER.	BEARING.		REDUCED DISTANCE.
	CAMPS.	STATION.		MAGNETIC.	TRUE.	
Aug 14	14	a	304	S 45 W	S 60 W	295
		I	136	S 67 W	S 82 W	132
		i	255	S 73 W	S 88 W	245
		ii	148	S 52 1/2 W	S 67 1/2 W	143
		iii	78	S 28 1/2 W	S 43 1/2 W	78
		iiii	469	S 40 W	S 55 W	469
		v	410	S 34 W	S 49 W	402
		vi	1462	N 58 1/2 W	N 43 1/2 W	1432
		vii	676	N 32 W	N 17 W	646
		viii	942	N 48 W	N 33 W	880
		ix	410	N 14 W	N 1 E	400
		x	181	W	N 75 E	180
		xi	227	N 20 W	N 5 W	223
		xii	704	N 34 W	N 19 W	680
		xiii	146	N 75 W	N 60 W	140
		xiiii	234	S 58 W	S 73 W	234
		xv	264	N 31 W	N 16 W	262
		xvi	59	N 45 W	N 30 W	57
		xvii	59	N 83 W	N 68 W	58
		xviii	186	N 70 W	N 55 W	186
		xix	145	N 21 W	N 6 W	145
		xx	290	N 67 W	N 52 W	282
		xxi	331	N 25 W	N 10 W	331
			<u>8116</u>			

Com Computer: *Marson*

NORTHING.	SOUTHING.	EASTING.	WESTING.	REMARKS.
	147.5		255.4	
	18.3		130.7	
	8.6		244.9	
	54.7		132.1	
	56.6		53.7	
	269.3		384.2	
	263.7		303.4	
1039.2			986.0	
617.7			188.9	
738.0			479.3	
399.9		.7		
14.7		173.9		
222.2			21.2	
643.0			221.4	
70.0			121.2	
	68.4		223.7	
251.8			72.3	
49.4			28.5	
21.7			53.8	
106.6			152.3	
144.2			19.6	
173.6			222.2	
326.0			57.5	
4808.0	887.1	174.6	4352.3	

Plotted

Station: Preceding page contd

DATE.	NO. OF		DISTANCE BY ODOMETER.	BEARING.		REDUCED DISTANCE.
	CAMPS.	STATION.		MAGNETIC.	TRUE.	
			8116			
		XII'	490	N 45 W	N 30 W	490
		XIII	758	N 28 W	N 13 W	758
		XIII'	630	N 40 W	N 25 W	630
	10-		631	N 46 W	N 31 W	631
		16.8	$ \begin{array}{r} 10625 \\ 633 \\ \hline 4295 \\ 3790 \\ \hline 4970 \end{array} $			

Computer:

NORTHING.	SOUTHING.	EASTING.	WESTING.	REMARKS.
4808.0	887.1	174.6	4352.3	
424.4			245.0	
738.6			170.5	
571.0			266.2	
<u>540.9</u>			<u>325.0</u>	
7082.9	887.1	174.6	5359.0	
6195.8			5184.4	
10.7 m			8.9 m.	

Plotted

Station: Camp 15 Van Brimmels Canyon to Camp 16 on Pond.

DATE.	NO. OF		DISTANCE BY ODOMETER.	BEARING.		REDUCED DISTANCE.
	CAMPS.	STATION.		MAGNETIC.	TRUE.	
Aug 15	15	a	578	N 30 W	N 15 W	578
		I	254	N 42 W	N 27 W	254
		i'	556	N 59 W	N 44 W	556
		ii	454	N 65 1/2 W	N 50 1/2 W	454
		ii'	376	N 70 W	N 55 W	376
		ii''	500	N 52 W	N 37 W	500
		iii	1044	N 61 W	N 46 W	1044
		iv	883	N 78 W	N 63 W	883
		v	840	N 78 W	N 63 W	840
		vi	519	N 86 W	N 71 W	519
		vi'	368	N 81 1/2 W	N 66 1/2 W	368
		vi''	403	S 85 W	S 80 W	403
		vi'''	478	S 86 1/2 W	N 78 1/2 W	478
		vii	440	S 89 W	N 76 W	440
		vii'	348	S 62 W	S 77 W	348
		viii	435	S 57 1/2 W	S 66 1/2 W	435
		viii'	140	S 22 W	S 37 W	136
		ix	175	S 37 1/2 W	S 52 1/2 W	172
		ix'	266	S 63 E	S 48 E	256
		x	229	S 65 E	S 50 E	220
		x'	272	S 69 E	S 54 E	260
		xi	348	S 62 1/2 E	S 47 1/2 E	330
		xi'	184	S 50 E	S 35 E	177
			1009			

Computer: *Maxson*

NORTHING.	SOUTHING.	EASTING.	WESTING.	REMARKS.
558.3			149.6	
226.4			115.3	
406.6			379.2	
288.7			350.3	
215.6			308.0	
399.3			300.9	
695.0			719.0	
400.9			786.8	
381.4			748.4	
168.9			490.7	
146.7			337.4	
70.0			396.9	
95.3			468.4	
106.4			426.9	
	78.3		339.1	
	173.5		399.3	
	108.6		181.8	
	104.7		136.5	
	171.3	190.3	190.3	
	141.4	168.5	168.5	
	152.8	210.3		
	222.9	243.3		
	145.0	101.5		
<u>4159.5</u>	<u>1298.5</u>	<u>913.9</u>	<u>6934.5</u>	

Plotted

Station: Camp 15 to camp 16

DATE.	NO. OF		DISTANCE BY ODOMETER.	BEARING.		REDUCED DISTANCE.
	CAMPS.	STATION.		MAGNETIC.	TRUE.	
		XI ⁿ	10090 221	S 72 W	S 87 W	220
		XI ^m	56	S 45 W	S 60 W	54
		XI ⁿ	56	S 72 W	S 84 W	56 ✓
		XII	184	S 24 W	S 39 W	180
		XII ⁱ	202	S 45 W	S 60 W	202
		XII ^a	202	S 13 W	S 28 W	202
		XII ^m	80	S 29 W	S 44 W	80
		XIII	484	S 40 E	S 25 E	484 ✓
		XIII ⁱ	212	S 24 E	S 9 E	212
		XIV	255	S 25 W	S 40 W	250
		XIV ⁱ	350	S 43 E	S 28 E	347
		XV	351	S 23 W	S 38 W	351
		XVI	175	S 2 1/2 E	S 12 1/2 W	175
Camp	16		170	S 33 E	S 18 E	170
		207	13088 1266 4280			

Computer: Max Jm

NORTHING.	SOUTHING.	EASTING.	WESTING.	REMARKS.
4159.5	1298.5	913.9	6934.5	
	7 11.5		219.7	
	27.0		46.8	
	2.9		55.9	
	139.9		113.3	
	101.0		174.9	
	178.4		94.8	
	57.6		55.6	
	438.6	204.6		
	209.4	33.2		
	191.5		160.7	
	306.4	162.9		
	276.6		216.1	
	170.9		37.9	
	161.7	52.5		
4159.5	3571.9	1367.1	8110.2	
587.6			6743.1	
1. mile			11.6 m	

Plotted

Station: Camp 16 to Camp 17. Pinal Canon. Aug 16"

DATE.	NO. OF		DISTANCE BY ODOMETER.	BEARING.		REDUCED DISTANCE.
	CAMPS.	STATION.		MAGNETIC.	TRUE.	
Aug 16	16	a	367	S 68 E	S 9 W	352
		T	92	S 61 E	S 46 E	87
		I'	160	S 14 W	S 29 W	148
		II	193	S 26 E	S 11 E	174
		II'	156	S 30 W	S 45 W	150
		II''	116	S 62 E	S 47 E	116
		III	308	S 3 W	S 18 W	308
		IV	896	S 52 E	S 37 E	880
		IV'	186	S 10 E	S 5 W	184
		V	436	S 60 E	S 45 E	376
		VI	771	S 31 E	S 16 E	740
		VI'	160	S 50 E	S 35 E	152
		VI''	80	S 9 W	S 24 W	80
		VI'''	320	S 78 E	S 63 E	314
		VII	318	S 20 W	S 35 W	318
		VIII	1147	S 54 E	S 39 E	1147
		VIII'	350	S 60 E	S 45 E	340
		VIII''	105	S 13 E	S 2 W	100
		VIII'''	105	S 63 E	S 48 E	103
		VIII''''	140	S 25 W	S 40 W	136
		VIII'''''	140	S 53 E	S 38 E	136
		IX	420	S 32 W	S 47 W	372
		X	717	S 47 E	S 32 E	690
			<u>7683</u>			

Computer: *Maxson*

NORTHING.	SOUTHING.	EASTING.	WESTING.	REMARKS.
	347.7		55.1	
	60.4	62.6		
	129.4		71.8	
	170.8	33.2		
	106.1		106.1	
	79.1	84.8		
	292.9		95.2	
	702.8	529.6		
	183.3		16.1	
	272.9	272.9		
	711.3	204.0		
	124.5	87.2		
	73.1		32.5	
	142.5	279.8		
	260.5		182.4	
	891.5	721.6		
	240.4	240.4		
	99.9		3.5	
	68.9	76.5		
	104.2		87.5	
	107.1	83.7		
	253.7		272.1	
	<u>585.2</u>	<u>365.6</u>		
	6008.2	3042.1	922.3	

Plotted

Station: Camp 16 to Camp 17 ^{2d}

DATE.	NO. OF		DISTANCE BY ODOMETER.	BEARING.		REDUCED DISTANCE.
	CAMPS.	STATION.		MAGNETIC.	TRUE.	
			7683			
		X'	397	S 65 E	S 50 E	390
		X''	165	S 40 E	S 25 E	160
		X'''	232	S 75 E	S 60 E	228
		XI'	132	S 10 W	S 25 W	128
		XI''	158	S 62 E	S 47 E	155
		XI'''	80	S 55 W	S 20 W	74
		XI''''	80	S 55 E	S 40 E	78
	17		<u>517</u>	S 53 E	S 38 E	517
	15.		9444			
			633			
			<u>3114</u>			

Computer: *Marsm*

NORTHING.	SOUTHING.	EASTING.	WESTING.	REMARKS.
	6008.2	3042.1	922.3	
	250.7	298.8		
	145.0	67.6		
	114.0	197.4		
	116.1		54.1	
	105.7	113.4		
	69.5		25.3	
	59.8	50.1		
	<u>407.4</u>	<u>318.3</u>		
	7276.4	4087.7	1001.7	
		3086.0		
	12.5 miles	5.3 m		

Plotted

Station: Camp No 17 Point Canon. to Camp 18 Cimarron

DATE.	NO. OF		DISTANCE BY ODOMETER.	BEARING.		REDUCED DISTANCE.
	CAMPS.	STATION.		MAGNETIC.	TRUE.	
Aug 17	17	I	577	S 64 E	S 49 E	560
		II	778	S 67 E	S 52 E	740
		III	564	S 45 E	S 30 E	540
		IV	1230	S 53 E	S 38 E	1230
			605	S 53 E	S 38 E	597
Aug 18		a	216	S 53 W	S 68 W	214
		b	405	S 70 W	S 85 W	400
		c	459	S 45 W	S 60 W	450
	18.	d	324	S 65 W	S 80 W	320
	8.1		5158			

5158
 5064

 940+
 221
 1308
~~305~~
 3661
 1446

 6636

- 6604
 690
 364
 3726
 5184
 6743

 328061
 6636

 26230

Trinidad to Cimarron by Computation from Astr. Positions

Computer: Maxson.

NORTHING.	SOUTHING.	EASTING.	WESTING.	REMARKS.
	367.4	422.6		
	455.6	583.1		
	466.7	270.0		
	969.6	757.5		
	470.4	367.5		
	80.2		198.4	
	349		398.5	
	225.0		389.5	
	<u>55.6</u>	<u> </u>	<u>315.1</u>	
	3125.4	2400.7	1301.7	
		1099.0		
	5.4 m	1.9 m		
	46.67			
	$\frac{5.3}{1.37}$			
			³⁸ 23.17	
			$\frac{29.1}{6}$	

Plot

Station: Side trip up the Cerezo. Aug 17 & 18. from Sta. IV Aug 17

DATE.	NO. OF		DISTANCE BY ODOMETER.	BEARING.		REDUCED DISTANCE.
	CAMPS.	STATION.		MAGNETIC.	TRUE.	
Aug 17	Sta IV	I	102	N 53 E	N 68 E	102
		II	238	N 31 1/2 E	N 46 1/2 E	238
		III	476	N 40 E	N 55 E	476
		IV	306	N 40 E	N 55 E	306
		V	748	N 62 W	N 47 W	748
		VI	510	N 65 W	N 50 W	510
Aug 18		VII	340	N 74 W	N 59 W	340
		VIII	170	S 70 W	S W	170
		IX	680	N 47 W	N 32 W	680
			3570			

23 mm

8400 should be added to determine the mouth of the Cerezo.

Computer: *Maxson*

NORTHING.	SOUTHING.	EASTING.	WESTING.	REMARKS.
38.3		94.6		<i>Distances in time No deductions, as trees were made before the time was put down.</i>
163.8		172.6		
273.0		389.9		
175.5		250.6		
510.2			547.1	
327.8			390.7	
175.1			291.4	
			170.0	
<u>576.7</u>			<u>360.3</u>	
2240.4		907.7	1759.5	
			851.8	
3.9 m			1.5 miles	<i>Plotted</i>

828 m

*633
170
82*

*220
23
2*

*33
220
26
26*

Plotted

Station: Trinidad to Cimarron.

DATE.	NO. OF		DISTANCE BY ODOMETER.	BEARING.		REDUCED DISTANCE.
	CAMPS.	STATION.		MAGNETIC.	TRUE.	
Aug 5	7-8					
Aug 6	8-9					
7	9-10					
8	10-11					
9	11-12					
10	12-13					
11	13-14					
14	14-15					
15	15-16					
16	16-17					
17	17-18					

Cimarron (by Kauff)

104° 55' 05" approx.
36° 33' 09" (± 1")

Trinidad to Cimarron by Kauff

Computer: *Maxson*

NORTHING.	SOUTHING.	EASTING.	WESTING.	REMARKS.
	8249.5	221.5		<i>Camp 7 at Trinidad.</i>
	7981.1	1307.9		
4137.6			6603.8	
1305.2			6908.0	
	5219.7		3641.4	
	4080.9	3661.0		
	4768.4	1446.1		
6195.8			5184.4	
587.6			6743.1	
	7276.4	3086.0		
	3125.4	1099.0		<i>Camp 18 at Cinnamon</i>
<hr/>	<hr/>	<hr/>	<hr/>	
12226.2	40701.4	10821.5	29080.7	
	28475.2		18259.2	
	49.1m		31.5m	
	46.67		³⁸ 23.158	

Station: Camp 18. Cimarron to Camp 19 Cimarron Canon

DATE.	NO. OF		DISTANCE BY ODOMETER.	BEARING.		REDUCED DISTANCE.
	CAMPS.	STATION.		MAGNETIC.	TRUE.	
Aug 22	18	"	1442	N 88 W	N 73 ³ / ₄ W	1370
		I	1133	S 85 W	N 80 ¹ / ₄ W	1100
		I'	417	N 60 W	N 45 ¹ / ₄ W	410
		II	116	S 86 W	N 81 ¹ / ₄ W	111
		II'	828	N 67 W	N 52 ¹ / ₄ W	787
		III	1348	N 65 W	N 50 ¹ / ₄ W	1296
		III'	927	N 54 W	N 39 ¹ / ₄ W	872
		IV	842	S 72 W	S 86 ³ / ₄ W	800
	19		1334	S 35 W	S 49 ³ / ₄ W	1310

Cimarron to Ft Union by Computation
from
Astronomical Observations

Computer:

NORTHING.	SOUTHING.	EASTING.	WESTING.	REMARKS.
395.2			1312.0	
172.0			1086.0	
288.6			291.2	
16.8			109.7	
481.8			622.2	
828.4			996.8	
675.3			551.8	
	45.4		798.7	
	846.6		999.6	
<hr/> 2858.1	<hr/> 892.0		<hr/> 6768.0	

Platt

1966.1

3.39 Miles

11.67 Miles

41.01

5.49

Station: Camp 19 Cimarron Canon & Ogilvie

DATE.	NO. OF		DISTANCE BY ODOMETER.	BEARING.		REDUCED DISTANCE.
	CAMPS.	STATION.		MAGNETIC.	TRUE.	
Aug 23	19	i	462	S 21 W	S 35 3/4 W	400
		ii	620	S 61 W	S 75 3/4 W	608
		iii	183 203	S 78 W	N 87 1/4 W	193
		iiii	730 810	S 44 W	S 58 3/4 W	745
		v	270	S 18 W	S 32 1/4 W	262
		vi	270	S 74 1/2 W	S 89 1/4 W	262
		vii	685	N 56 W	N 41 1/4 W	670
		viii	195	N 75 W	N 60 1/4 W	190
		ix	781	S 65 W	S 79 3/4 W	765
		x	117	S 50 W	S 64 3/4 W	113
		xi	244	S 10 E	S 24 3/4 W	266
		xii	136	S 65 W	S 79 3/4 W	130
		xiii	205	N 89 N	N 74 1/4 W	195
		xiv	205	N 52 W	N 37 1/4 W	195
		xv	971	N 53 1/2 W	N 38 3/4 W	952
		xvi	1308	N 35 1/2 W	N 20 3/4 W	1270
		xvii	1405	N 34 1/2 W	N 19 3/4 W	1377
	20		170	N 29 W	N 14 1/4 W	170

Computer: *Massie*

NORTHING.	SOUTHING.	EASTING.	WESTING.	REMARKS.
	365.2		262.9	
	149.7		589.3	
9.2			192.8	
	386.5		636.9	
	220.4		141.8	
	.3		262.0	
573.7			441.8	
94.3			165.0	
	136.1		752.8	
	48.2		102.2	
	265.1		22.0	
	23.1		127.9	
53.0			187.7	
156.0			118.6	
742.5			595.9	
1187.5			449.8	
1296.5			465.0	
164.8			41.8	
4207.5	1594.6		5556.2	
2612.9				
4.52 Miles			9.58 Miles	

Plotted

Station: Camp 20 Elizabethton to Camp 21 Am. Cr

DATE.	NO. OF		DISTANCE BY ODOMETER.	BEARING.		REDUCED DISTANCE.
	CAMPS.	STATION.		MAGNETIC.	TRUE.	
Aug 26	20	I	1221	S 35 E	S 20 1/4 E	1221
		II	782	S 37	S 17 3/4 W	767
		III	1077	S 12 1/2 E	S 2 1/4 W	1006
		IV	749	S 12 E	S 2 3/4 W	749
		V	770	S 9 E	S 5 1/4 W	755
		VI	1413	S 9 1/2 E	S 5 1/4 W	1413
		VII	732	S 7 E	S 7 3/4 W	717
	21		834	S 76 E	S 6 1/4 E	800
	12		7578 633 1248			

Computer: Maxim

NORTHING.	SOUTHING.	EASTING.	WESTING.	REMARKS.
	1145.7	4223		
	730.5		233.8	
	1055.2		41.5	
	748.1		35.9	
	757.2		75.7	
	1408.0		123.1	
	710.4		96.6	
	384.8	701.4		
	6933.9	11237	6066	
		517.5		
	11.95m	0.89m		

Plotted

Station: Camp 21 to Camp 22 Rayado Can

DATE.	NO. OF		DISTANCE BY ODOMETER.	BEARING.		REDUCED DISTANCE.
	CAMPS.	STATION.		MAGNETIC.	TRUE.	
Aug 27	21	I	398	S 80° E	S 65 1/2° E	382
		II	989	S 80° E	S 65 1/2° E	950
		III	605	S 45° E	S 30 1/2° E	588
		IV	179	S 60° E	S 45 1/2° E	179
		V	793	S 72° E	S 57 1/2° E	730
		VI	1654	S 45° E	S 30 1/2° E	1620
		VII	1072	S 60° E	S 45 1/2° E	1072
		VIII	700	S 60° E	S 45 1/2° E	693
		IX	261	N 65° E	N 79 1/2° E	260
		X	262	N 80° E	N 82 1/2° E	242
				X	287	E
	22		264	S 75° E	S 60 1/2° E	210
			115	$\begin{array}{r} 7464 \\ 633 \\ \hline 1133 \\ 633 \\ \hline 5 \end{array}$		

Computer: Maxson

NORTHING.	SOUTHING.	EASTING.	WESTING.	REMARKS.
	158.4	347.6		
	394.0	864.5		
	506.6	248.5		
	125.5	127.7		
	292.2	615.7		
	1396.2	822.2		
	751.0	764.7		
	485.7	494.2		
47.4		255.6		
23.2		240.9		
	68.1	267.2		
	103.4	182.8		
<hr/>	<hr/>	<hr/>		
70.6	4381.1	5281.6		

Plotted

$$\begin{array}{r} 65/630 \quad / \quad 0.9692 \\ \underline{585} \quad \quad \quad 967 \\ 450 \\ \underline{390} \\ 600 \\ \underline{585} \\ 150 \end{array}$$

4310.5

7.43 Miles 9.01 Miles

$$\begin{array}{r} 9692 \\ \underline{743} \\ 29076 \\ 38768 \\ \underline{67644} \\ 9581156 \end{array}$$

$$\begin{array}{r} .9692 \\ \underline{9.01} \\ 9692 \\ 87228 \\ \underline{\quad} \\ 8.93 \end{array}$$

Station: Camp 22 Rayado to Camp 23 Uru-

DATE.	NO. OF		DISTANCE BY ODOMETER.	BEARING.		REDUCED DISTANCE.
	CAMPS.	STATION.		MAGNETIC.	TRUE.	
Aug 28	22	I	843	N 65 E	N 80 E	803
		II	261	N 50 E	N 65 E	222
		III	426	N 28 E	N 43 E	362
		IV	589	N 63 E	N 78 E	560
		V	268	S 80 E	S 65 E	268
		VI	2168	N 40 E	N 55 E	1952
			1247	N 48 E	N 63 E	1210
	23		820	N 30 E	N 45 E	788
			$ \begin{array}{r} 1247 \\ + 666 \\ \hline 1913 \\ + 2920 \\ \hline 4833 \\ - 3880 \\ \hline 953 \end{array} $			

Computer: *Maxon*

NORTHING.	SOUTHING.	EASTING.	WESTING.	REMARKS.
139.4		790.8		
93.9		201.2		
254.8		246.9		
116.4		547.8		
	113.3	242.9		
1119.8		1598.6		
549.5		1077.9		
557.2		557.2		
2841.0	113.3	5263.3		
2727.7				
4.62 miles		9.07 miles		

Plotting

Station: Camp 18 in Cimarron to Camp 23 Arco

DATE.	NO. OF		DISTANCE BY ODOMETER.	BEARING. $100\frac{1}{4}$		REDUCED DISTANCE.
	CAMPS.	STATION.		MAGNETIC.	TRUE.	
Aug 30	18	How-	130	S 8 W	S 22 $\frac{3}{4}$ W	130
		VI	500	S 28 W	S 42 $\frac{3}{4}$ W	490
		V'	89	S 22 E	S 7 $\frac{1}{4}$ E	85
		V	110	S 10 $\frac{1}{2}$ W	S 25 $\frac{1}{4}$ W	108
		IV'	261	S 10 $\frac{1}{2}$ W	S 25 $\frac{1}{4}$ W	261
		IV	205	S 15 $\frac{1}{2}$ W	S 30 $\frac{1}{4}$ W	205
		III	500	S 7 W.	S 21 $\frac{3}{4}$ W	490
		"	277	S 18 W	S 32 $\frac{3}{4}$ W	272
		I'	895	S 15 $\frac{1}{2}$ W	S 30 $\frac{1}{4}$ W	895
		I	145	S 50 W	S 62 $\frac{3}{4}$ W	145
	23		791	S 47 W	S 61 $\frac{3}{4}$ W	760
		633	4703	74		
			4431	15		
			2720	5.9		

Computer: *Maxim*

NORTHING.	SOUTHING.	EASTING.	WESTING.	REMARKS.
	119.9		50.3	These courses
	359.8		332.6	were run by Tom.
	84.3	10.7		men from Camp
	97.7		46.1	23 to Connect
	236.1		111.3	the monument of
	177.1		103.3	Dr. Kampf with
	455.1		181.6	Camp 1 E. and by
	228.8		147.2	serve as a check
	781.8		459.9	on the meander
	61.8		131.1	up the Aquarian
	359.7		669.5	+ across the
	<u>2962.1</u>	10.7	<u>2222.9</u>	mountains. Here
	2951.4		2222.2	they are given in
	5.107			more or less +
	5.01 miles			with revised bear-
			3.83 miles	ings. <u>MS. Sept 30</u>

Plotted

630
363054
1850

Computer:

NORTHING.	SOUTHING.	EASTING.	WESTING.	REMARKS.
3.39 4.52			11.67 9.58	
	11.95 7.43	.89 9.01		
4.62		9.07		
12.53	19.38	18.97	21.25	
	6.85		2.28	
	5.01		3.85	
	+ 1.84		- 1.57	

189.4
5
31
2425

Station: Camp 23 Area to Camp 24.

DATE.	NO. OF		DISTANCE BY ODOMETER.	BEARING.		REDUCED DISTANCE.
	CAMPS.	STATION.		MAGNETIC.	TRUE.	
Aug 31	23	I	996	N 47 E	N 6 1/2 E	880
		I'	334	S 33 E	S 18 1/2 E	328
		II	534	S 27 1/2 E	S 13 E	530
		III	315	S 40 E	S 25 1/2 E	309
		III'	534	S 24 E	S 9 1/2 E	504
		IV	241	S 42 E	S 27 1/2 E	227
		V	1832	S 35 E	S 20 1/2 E	1814
		VI	195	S 14 W	S 28 1/2 W	190
		VII	1270	S 18 E	S 3 1/2 E	1270
		VII'	329	S 70 E	S 55 1/2 E	316
		VIII	642	S 48 E	S 33 1/2 E	616
		IX	1552	S	S 14 1/2 W	1475
		X	1362	S 60 E	S 45 1/2 E	1335
		X'	322	S 26 E	S 17 1/2 E	316
		XI	183	S 78 E	S 87 1/2 E	180
		XII	300	S 77 E	S 62 1/2 E	294
		XII'	370	S 42 E	S 27 1/2 E	370
		XIII	324	S 10 E	S 4 1/4 W	324
		XIII'	708	S 42 E	S 27 1/2 E	708
		XIV	284	S 25 W	S 39 1/2 W	284
		XV	315	S 13 E	S 1 1/2 E	315
			277	S 60 W	S 74 1/2 W	277
	24		13139			

7.4
1.59
47.06
44.31
27.50

3.9

2436
899
5370

4.3
2 2456
27
271420
253
1820

1552
1362
4.2 2914
278
263 1/2
213 1/2
1040

11/ 1532
 139
 298

Computer:

NORTHING.	SOUTHING.	EASTING.	WESTING.	REMARKS.
419.9		773.4		
	311.1	104.0		
	576.4	119.2		
	278.9	153.1		
	497.2	83.2		
	201.3	104.8		
	1699.1	634.9		
	171.4	75.7	93.1	
	1257.9	77.3		
	179.0	260.4		
	513.7	340.0		
	1427.6		369.8	
	935.5	952.0		Plotted Southing 16.91 miles Easting 6.43 miles
	309.7	63.0		
	7.9	179.8		
	135.8	260.8		
	328.2	170.8		
	323.1		24.0	
	628.0	326.9		
	219.2		180.6	
	314.9	8.2		
	74.1		267.0	
419.9	10330.0	4591.8	934.5	
	9910.1		3657.3	

Station: Camp 24. La Bahia to Camp 25. Antelcan

DATE.	NO. OF		DISTANCE BY ODOMETER.	BEARING. ^{14/4}		REDUCED DISTANCE.
	CAMPS.	STATION.		MAGNETIC.	TRUE.	
Sept 1	24		1594	S 13 E	S 1/4 E	1594
		I	532	S 55 E	S 40 3/4 E	460
633		I'	1255	S 42 E	S 27 3/4 E	1255
		II	217	S 21 E	S 6 3/4 E	217
6096		II'	396	S 16 E	S 10 1/4 E	396
5697		III	883	N 70 W	N 56 3/4 W	867
3990		IV	1219	S 82 1/2 W	S 83 1/4 W	1170
6096		V	893	S 73 W	S 87 1/2 W	876
		V'	1106	N 87 W	N 72 3/4 W	1084
		VI	355	S 55 W	S 69 1/4 W	348
		VII	698	N 65 W	N 50 3/4 W	670
			568	N 65 W	N 50 3/4 W	568
25			<u>9716</u>			
			633			
			<u>3386</u>			
			3165			
			<u>2210</u>			

Computer: Maxson

NORTHING.	SOUTHING.	EASTING.	WESTING.	REMARKS.
	1594.0	35.0		
	348.5	300.3		
	1110.7	584.6		
	215.5	25.5		
	395.8	12.1		
487.9			716.7	
131.2			1161.5	
	417.3		875.0	
321.4	417.3		1035.2	
	123.3		325.4	
423.9			518.8	
359.4			439.9	
1723.8	4205.1	957.5	5072.5	Plotted
	379.20			
	2481.3		4115.0	
	2068.2			
	4.28		7.095	
	2068.2			
	417.3			
	44.2			
	413.1			
	3.57			
58/2068.2	3.57			
174				
328				
290				
32				

Station: Camp 25. Ocala Cairn to Camp 26 Coyote.

DATE.	NO. OF		DISTANCE BY -ODOMETER.	BEARING.		REDUCED DISTANCE.
	CAMPS.	STATION.		MAGNETIC.	TRUE.	
Sept 2	25	I	293	S 85 W	S 80 3/4 W	293
		II	648	S 80 W	S 85 3/4 W	648
		III	474	S 55 W	S 69 1/2 W	400
		IV	363	S 35 W	S 49 1/4 W	345
		V	1497	S 24 W	S 38 1/2 W	1467
		VI	545	S 25 W	S 39 1/4 W	545
		VII	1637	S 28 W	S 42 1/2 W	1637
		VIII	926	S 36 W	S 50 1/4 W	926
		IX	649	S 25 1/2 W	S 39 3/4 W	649
		X	220	S 1 W	S 15 1/4 W	216
		XI	423	S 2 1/2 E	S 11 3/4 W	423
		XII	376	S 20 E	S 15 3/4 E	376
		XIII	248	S	S 14 1/4 W	248
		XIV	629	S 32 W	S 46 1/4 W	629
		XV	1229	S 58 W	S 72 1/4 W	1227
		XVI	112	N 85 W	N 80 3/4 W	110
		XVII	122	S 75 W	S 89 1/4 N	110
		XVIII	126	S 50 W	S 64 1/4 W	126
		XIX	293	S 5 E	S 9 1/4 W	280
		XX	504	S 27 1/2 W	S 42 3/4 W	484
		XXI	336	S 24 E	S 9 3/4 E	310
	26		427	S 60 W	S 74 1/4 W	410
			12077			7

1901
 12077
 6337
 5747
 5090

Computer: *Mayson*

NORTHING.	SOUTHING.	EASTING.	WESTING.	REMARKS.
47.1			289.2	
48.0			646.1	
	159.4		420.8	
	225.2		261.4	
	1151.6		908.5	
	422.1		344.9	
	1213.4		1100.9	
	592.8		712.7	
	499.0		415.0	
	208.4		56.8	
	414.1		86.1	
	361.9	102.0		
	240.4		61.1	
	434.9		454.4	
	374.2		1168.7	
17.7	+		108.6	
	1.4		110.0	
	54.7		113.5	
	276.4		45.0	
	361.8		322.9	
	305.5	52.5	111.3	72.97
	111.3		394.6	76266
112.8	740.82	154.5	802.2	
	4296		7866.7	

Plotted

South 12.58
West 13.58

Station: *Camp 20 Meander up the Mornid*

DATE.	NO. OF		DISTANCE BY ODOMETER.	BEARING.		REDUCED DISTANCE.
	CAMPS.	STATION.		MAGNETIC.	TRUE.	
<i>Aug 25</i>	<i>20</i>	<i>I</i>	<i>748</i>	<i>N 16 W</i>	<i>N 13 1/4 W</i>	<i>726</i>
<i>"</i>		<i>II</i>	<i>374</i>	<i>N 21 W</i>	<i>N 6 3/4 W</i>	<i>370</i>
<i>"</i>		<i>III</i>	<i>1224</i>	<i>N 5 W</i>	<i>N 9 1/4 E</i>	<i>1163</i>
					<i>14 1/4</i>	
			<i>To Witts Saw-mill.</i>			
<i>Aug 26</i>			<i>340</i>	<i>N 74 W</i>	<i>N 59 3/4 W</i>	<i>340</i>
			<i>238</i>	<i>S 83 W</i>	<i>S 82 3/4 W</i>	<i>238</i>
					<i>14 1/4</i>	
			<i>Up American Creek</i>			
<i>Aug 27</i>		<i>S</i>	<i>580</i>	<i>S 80 E</i>	<i>S 65 1/4 E</i>	<i>580</i>
			<i>435</i>	<i>S 86 E</i>	<i>S 71 1/4 E</i>	<i>430</i>
					<i>14 1/4</i>	
			<i>Rayado Cañon</i>			
<i>Aug 28</i>			<i>884</i>	<i>N 64 E</i>	<i>N 79 E</i>	<i>884</i>
			<i>290</i>	<i>S 64 1/2 E</i>	<i>S 49 1/2 E</i>	<i>290</i>
			<hr/>			
			<i>5113</i>	<i>8.82 Miles.</i>		

Computer: *Mason*

NORTHING.	SOUTHING.	EASTING.	WESTING.	REMARKS.
$\begin{array}{r} 725.8 \\ 367.5 \\ \hline 1148.2 \\ 2241.5 \end{array}$	<p><i>Plotted</i></p>	$\begin{array}{r} 187.1 \\ \hline 187.1 \end{array}$	$\begin{array}{r} 21.9 \\ 43.5 \\ \hline 65.4 \end{array}$	<p>Distances Es'd in time, 17 min to one mile. or 580 revs of od- ometer.</p>
$\begin{array}{r} 171.3 \\ \hline 30.0 \\ 201.3 \end{array}$		<p><i>Plotted</i></p>	$\begin{array}{r} 528.8 \\ \hline 408.4 \\ 936.2 \end{array}$	$\begin{array}{r} 293.7 \\ \hline 236.1 \\ 529.8 \end{array}$
$\begin{array}{r} 168.7 \\ \hline 168.7 \end{array}$	$\begin{array}{r} 188.3 \\ \hline 188.3 \end{array}$		$\begin{array}{r} 867.7 \\ \hline 220.5 \\ 1088.2 \end{array}$	

Station: Camp 23. Meander up the Cim-ets

DATE.	NO. OF		DISTANCE BY ODOMETER.	BEARING.		REDUCED DISTANCE.
	CAMPS.	STATION.		MAGNETIC.	TRUE. $14^{\circ} 52'$	
Aug 30	23	I	782	N 45 E	N 60 E	767
		II	580	N 15 E	N 40 E	580
		III	204	S 80 W	N 85 W	200
		IV	204	N 88 W	N 73 W	200
		V	442	N 57 W	N 42 W	425
		VI	68	S 80 W	N 85 W	68
		VII	1768	W	N 75 W	1715
		VIII	986	S 80 W	N 85 W	980
			5034			

8.68 Miles.

Computer: *Maxson.*

NORTHING.	SOUTHING.	EASTING.	WESTING.	REMARKS.
383.5		664.2		Est'd 17 minutes to one mile or
443.3		372.8		
17.4			199.2	580 revs of
58.5			191.3	odometer.
315.8			284.4	—
5.9			67.7	
443.9			1656.6	
<u>85.4</u>		<u> </u>	976.2	Plotted
1753.7		1037.0	3375.4	
			2338.4	
3.02			4.03	

Station: *Camp 27 to Camp on Elk Lake.*

DATE.	NO. OF		DISTANCE BY ODOMETER.	BEARING. ^{13°}		REDUCED DISTANCE.
	CAMPS.	STATION.		MAGNETIC.	TRUE.	
Sept 4	27		442	N 53 1/2 E	N 66 1/2 E	430
		I	374	N 24 1/2 E	N 37 1/2 E	363
		II	170	N 12 W	N 1 E	167
		II'	170	W	N 77 W	165
		III	408	N 15 W	N 2 W	392
		III'	136	N 10 E	N 23 E	132
		IV	340	N 14 1/2 E	N 14 1/2 E	334
		IV'	102	N 34 E	N 47 E	102
		V	204	N 4 E	N 17 E	202
		V'	204	N 3 W	N 10 E	200
		VI	340	N 16 W	N 3 W	333
		VI'	68	N 16 E	N 29 E	66
		VII	374	N 38 W	N 25 W	367
		VII'	136	N 4 E	N 17 E	130
		VII''	68	N 57 W	N 4 W	66
		VIII	102	N 17 W	N 4 W	100
		IX	459	N 21 W	N 8 W	440
		IX'	580	N 22 W	N 9 W	570
		X	136	N 3 E	N 16 E	126
		X'	374	N 42 W	N 29 W	374
		XI	602	N 40 W	N 27 W	600
		XII	476	N 3 E	N 16 E	467
		XIII	221	N 17 E	N 30 E	212
		To top of mesa	238	E	S 77 E	238

9.
~~54 + 8~~
~~251~~
 9.9

14/602

5187
~~5160~~
~~5159~~
 5948

Computer: Maxson

NORTHING.	SOUTHING.	EASTING.	WESTING.	REMARKS.
171.5		394.3		Dis in Time
288.0		221.0		
167.0		0.4		Total Dis. 6724
30.0			131.6	or 11.6 Miles
391.8			13.9	
121.5		51.6		
322.4		83.6		
69.6		74.6		
192.1		59.4		
197.0		34.7		
332.5			17.5	
57.7		32.0		
332.6			155.1	
124.3		38.0		
47.5			45.9	
99.8			7.0	
435.7			61.2	
563.0			89.2	
121.2		34.8		
328.9			182.3	
534.6			272.4	
448.9		128.7		
183.6		106.0		
		53.7		

$$\begin{array}{r}
 N \quad E \\
 556.2 \quad 131.8 \\
 225.9 \quad 97.1 \\
 \hline
 5335.3 \quad 336.7 \\
 N \quad 284.8 \\
 \quad \quad 127.9 \quad E
 \end{array}$$

$$\begin{array}{r}
 556.2 \\
 376.1 \\
 \hline
 5185.1 \quad N
 \end{array}$$

Plotted
 9/20/75

$$\begin{array}{r}
 64.1 \\
 202.4 \\
 \hline
 632.5 \\
 256.2 \\
 \hline
 376.1
 \end{array}$$

$$\begin{array}{r}
 18.4 \\
 73.6 \\
 \hline
 128.7 \\
 106.0 \\
 \hline
 53.7
 \end{array}$$

$$\begin{array}{r}
 288.4 \\
 231.6 \\
 \hline
 214.8
 \end{array}$$

$$\begin{array}{r}
 53.7 \\
 \hline
 225.9
 \end{array}$$

Station: Camp on Elk Lake up the Coyote

DATE.	NO. OF		DISTANCE BY ODOMETER.	BEARING. $13''$		REDUCED DISTANCE.
	CAMPS.	STATION.		MAGNETIC.	TRUE.	
Sept 5 E.L.		I	990	N 38 W	N 25 W	980
		II	760	N 30 W	N 17 W	740
		III	540	N 26 W	N 13 W	530
		IV	135	N 87 W	N 74 W	132
		V	450	N 75 W	N 62 W	445
		VI	670	N 23 W	N 10 W	660
Divide		VII	90	E	S 77 E	90
			3535			

6.1 Miles.

Computer: *Mason*

NORTHING.	SOUTHING.	EASTING.	WESTING.	REMARKS.
888.2			414.2	13 Minutes to one
707.7			216.4	mile. or 580
516.4			119.2	rev's of odometer.
36.1			126.0	M
209.0			392.9	
640.1		87.7	112.9	Courses ended
	20.2	87.7		on divide return
2997.5	20.2	87.7	1381.6	Coyote, and
20.2			87.7	Cine Silla rallye
<u>2977.3</u>			1293.9	

Settled Dist on 7/25

Station: *Camp 26 Coyote to Camp 27*

DATE.	NO. OF		DISTANCE BY ODOMETER.	BEARING.		REDUCED DISTANCE.
	CAMPS.	STATION.		MAGNETIC.	TRUE.	
<i>Sept 26</i>		<i>a</i>	<i>490</i>	<i>N 85 W</i>	<i>N 72 3/4 W</i>	<i>450</i>
		<i>1</i>	<i>490</i>	<i>N 20 W</i>	<i>N 7 1/4 W</i>	<i>490</i>
		<i>1a</i>	<i>316</i>	<i>N 14 E</i>	<i>N 26 1/4 E</i>	<i>303</i>
		<i>11</i>	<i>737</i>	<i>N 20 W</i>	<i>N 7 1/4 W</i>	<i>722</i>
		<i>11a</i>	<i>658</i>	<i>N 26 W</i>	<i>N 13 1/4 W</i>	<i>658</i>
		<i>111</i>	<i>88</i>	<i>N 60 W</i>	<i>N 47 1/4 W</i>	<i>88</i>
		<i>111a</i>	<i>500</i>	<i>N 30 W</i>	<i>N 17 1/4 W</i>	<i>490</i>
		<i>1V</i>	<i>125</i>	<i>N 60 W</i>	<i>N 47 1/4 W</i>	<i>120</i>
		<i>V</i>	<i>578</i>	<i>North</i>	<i>N 12 3/4 E</i>	<i>460</i>
		<i>VI</i>	<i>750</i>	<i>North</i>	<i>N 12 3/4 E</i>	<i>735</i>
		<i>VII</i>	<i>317</i>	<i>N 60 W</i>	<i>N 47 1/4 W</i>	<i>317</i>
		<i>VIII</i>	<i>2129</i>	<i>N 28 W</i>	<i>N 15 1/4 W</i>	<i>2129</i>
		<i>VIIIa</i>	<i>233</i>	<i>N 20 E</i>	<i>N 32 1/4 E</i>	<i>230</i>
		<i>IX</i>	<i>233</i>	<i>N 55 W</i>	<i>N 42 1/4 W</i>	<i>230</i>
			<i>383</i>	<i>N 85 W</i>	<i>N 72 1/4 W</i>	<i>383</i>

27

11.7

742.7
58

162
116

467

58 | 742.7 | 12.8

58

162
116

467

8027

7427

13.84 miles

12.8

58 | 619.58 | 10.68

58

395

348

478

58 | 156.04 | 2.69

58

116

400

348

Computer: *Mapson*

NORTHING.	SOUTHING.	EASTING.	WESTING.	REMARKS.
137.2			428.6	
486.1			61.8	
270.6		136.4		
714.2			91.2	
640.5			50.8	
59.4			64.9	
468.0			145.3	
81.5			88.1	
448.7		101.5		
716.9		162.2		
215.2			232.7	
1475.2			402.1	
2054.0			559.6	
193.4		124.4		
170.2			154.6	
116.7			364.8	
6974.6		524.5	22424	
6195.8			1717.9	
10.68			1560.4	
11.33 Miles			2.94 Miles	
			2.69.	
				598.8
				677
				137.5

Plotted

$$\begin{array}{r}
 584 \\
 6774.6 \\
 \hline
 580 \\
 974 \\
 \hline
 580 \\
 3948 \\
 \hline
 346 \\
 \hline
 \end{array}$$

Station: Camp 27 to Camp 28 Rto de las Lajas.

DATE.	NO. OF		DISTANCE BY ODOMETER.	BEARING. 13°		REDUCED DISTANCE.
	CAMPS.	STATION.		MAGNETIC.	TRUE.	
Sept 5	27	a	477 ⁰	N 33 W	N 20 W	477
		I	1567 ⁸	N 45 W	N 32 W	1442
		II	1461 ⁵	N 45 W	N 32 W	1242
		IIa	150 ⁵	N 30 E	N 43 E	142
		III	450 ²	N 35 W	N 22 W	440
		IV	774 ⁵	S 35 W	S 48 W	658
		IVa	170 ⁰	S 50 E	S 37 E	170
		V	460 ⁰	S 11 E	S 2 W	460
		VI	426 ⁰	S 35 W	S 48 W	405
		VIa	400 ⁸	S 5 W	S 18 W	368
		28			706 ⁵	S 30 W
			<u>11.1</u>	<u>711</u>	<u>780</u>	

Computer: *Maxson*

NORTHING.	SOUTHING.	EASTING.	WESTING.	REMARKS.
448.3			163.1	
1222.6			764.3	
1153.6			658.3	
103.9		97.0		
413.5			150.5	
	440.3		488.9	
	137.8	102.3		
	459.7		16.4	
	271.1		301.0	
	350.0		117.7	
	490.0		456.9	
3241.9	2146.9	199.3	3117.1	<i>Plotted</i>
1095.0			2917.8	
1.89 Miles			5.11 Miles	

Computer: *Maxson*

NORTHING.	SOUTHING.	EASTING.	WESTING.	REMARKS.
	166.1		258.2	
225.2		108.6		
998.8			272.2	
144.4			59.1	
346.0			657.6	
293.8			11.6	
318.4			242.1	
275.4			209.4	
2602.0	166.1	108.6	1710.2	<i>Plotted</i>
2435.9			1601.6	
4.20 Miles			2.76 Miles.	
	166.1		258.2	
225.2		108.6		
59.1			140.6	
0,102 ^{mts}			0,258 ^{mts}	

Station: Station II of Sept. 6 to Camp 30.

DATE.	NO. OF		DISTANCE BY ODOMETER.	BEARING.		REDUCED DISTANCE.
	CAMPS.	STATION.		MAGNETIC.	TRUE.	
Sept 8	Sta II	11	893 ²	5 25 W	15 3 3/4 W	876
		11 1/2	1553 ²	5 8 1/2 W	15 2 3/4 W	520
		11 N	3545 ⁵	1 2 1/2 E	15 2 3/4 E	3340
	30		833 ²	5 45 E	15 30 1/4 E	816
			10. 6794			
	67		<u>317</u>			
			4640			
			11.71 Miles			

Computer: Maxson

NORTHING.	SOUTHING.	EASTING.	WESTING.	REMARKS.
	673.5		560.1	
	1396.4		599.9	
	3336.0		159.6	
	<u>704.9</u>	411.1		
	6110.8	411.1	1319.6	
	6051.7			
			908.5	Water
	11.53 Miles		1.56 Miles,	

Station: *Camp 30 to Camp 31*

DATE.	NO. OF		DISTANCE BY ODOMETER.	BEARING. <i>14 1/2</i>		REDUCED DISTANCE.
	CAMPS.	STATION.		MAGNETIC.	TRUE.	
<i>Sept 9</i>	<i>30</i>	<i>I</i>	<i>445²</i>	<i>S</i>	<i>S 14 1/2 W</i>	<i>436</i>
		<i>Ia</i>	<i>370⁵</i>	<i>S 35 E</i>	<i>S 20 1/2 E</i>	<i>351</i>
		<i>II</i>	<i>230²</i>	<i>S 17 W</i>	<i>S 31 1/2 W</i>	<i>225</i>
		<i>III</i>	<i>184⁰</i>	<i>S 45 E</i>	<i>S 30 1/2 E</i>	<i>184</i>
		<i>IV</i>	<i>869²</i>	<i>S 62 E</i>	<i>S 47 1/2 E</i>	<i>852</i>
	<i>31</i>		<u><i>1062⁰</i></u>	<i>S 89 E</i>	<i>S 74 1/2 E</i>	<i>1062</i>
			<i>3160</i>			

5.0

22

*531
869
1400
1200
13*

5.38 Miles.

Computer: *Maxson*

NORTHING.	SOUTHING.	EASTING.	WESTING.	REMARKS.
	422.1		109.2	
	328.7	123.0		
	191.9		117.5	
	158.6	93.4		
	575.7	628.2		
	283.8	1023.4		
	<u>1960.8</u>	<u>1868.0</u>	<u>226.7</u>	
		1641.3		

Plotted

3.38 Miles 2.83 Miles.

Station: Camp 31 Mora Riv. to Camp 32 Fort U.S.

DATE.	NO. OF		DISTANCE BY ODOMETER.	BEARING.		REDUCED DISTANCE.
	CAMPS.	STATION.		MAGNETIC.	TRUE.	
Sept-10.	31	1	818	S 50 E	S 35 1/2 E	794
		11	405	N 75 E	N 59 1/2 E	400
		3	1579	S 77 1/2 E	S 62 E	1564
		3	45	N 70 E	N 84 1/2 E	45
		4	136	N 56 E	N 70 1/2 E	136
			884	N 25 1/2 E	N 40 E	867
			2238	N 63 E	N 77 1/2 E	2238
			915	S 74 E	S 59 1/2 E	910
			480	S 46 E	S 31 1/2 E	480
			715	S 77 E	S 62 1/2 E	715
			330	N 77 E	S 88 1/2 E	330
			330	S 87 E	S 72 1/2 E	330
			440	S 57 E	S 42 1/2 E	440
			138	N 81 1/2 E	S 84 E	138
			165	S 72 E	S 57 1/2 E	165
			495	S 59 E	S 44 1/2 E	495
	397	N 70 E	N 84 1/2 E	397		
	621	S 66 E	S 51 1/2 E	621		
	414	S 53 E	S 38 1/2 E	414		
	345	S 66 E	S 51 1/2 E	345		
	504	N 80 E	S 85 1/2 E	504		

14 1/2

479
 2983
 253
 45
 5310

1916
 394
 1263
 606
 569
 3670

12394

Computer: Maxson.

NORTHING.	SOUTHING.	EASTING.	WESTING.	REMARKS.
	647.3	461.7		
3		400.0		
	734.1	1380.5		
4.3		44.8		
45.4		128.2		
664.2		557.3		
484.2		2185.1		
	461.9	784.1		
	409.3	250.8		
	330.1	634.2		
	.9	329.9		
	99.2	314.7		
	324.4	297.3		
	14.4	137.3		
	90.3	141.7		
	353.1	346.9		
38.1		395.2		
	386.6	486.0		
	324.0	257.7		
	214.8	270.0		
	39.5	502.5		
1236.5	4429.9	10305.9		
	3193.4			
	5.51 M.	19.31 Miles,		

Plotted

Station: *Camp 23. Uraca to Fort Union.*

DATE.	NO. OF		DISTANCE BY ODOMETER.	BEARING.		REDUCED DISTANCE.
	CAMPS.	STATION.		MAGNETIC.	TRUE.	
<i>Aug 31</i>	<i>23</i>	<i>24</i>				
<i>Sept 1</i>	<i>24</i>	<i>25</i>				
<i>2</i>	<i>25</i>	<i>26</i>				
<i>4</i>	<i>26</i>	<i>27</i>				
<i>5</i>	<i>27</i>	<i>28</i>				
<i>6</i>	<i>28</i>	<i>29</i>				
<i>8</i>	<i>29</i>	<i>30</i>				
<i>9</i>	<i>30</i>	<i>31</i>				
<i>10</i>	<i>31</i>	<i>32</i>				
	<i>32</i>					

Computer:

NORTHING.	SOUTHING.	EASTING.	WESTING.	REMARKS.
	16.91	6.13		
	4.28		7.09	
	12.58		13.58	
11.33			2.94	
1.89			5.94	
4.20			5.96	156
	10.53		4.56	
	3.38	2.83	1.56	
	5.51	19.31		
17.42	58.19	28.27	32.93	
	35.77		4.66	
	4.10		2.51	
	39.87	South	2.15	West. of camp at Uraca.

Camp 18 Cimarron to Camp 20 Eliz-
 Station: nd Camp 20. Elizabethtown to Camp 32. F.U.

DATE.	NO. OF		DISTANCE BY ODOMETER.	BEARING.		REDUCED DISTANCE.
	CAMPS.	STATION.		MAGNETIC.	TRUE.	
Aug. 22	18	19	14.47	Cimarron to Camp 19.		
23	19	20	15.69	Camp 19 to Elizabethtown		
26	20	21	13.06	Elizabethtown to American Cr.		
29	21	22	12.87	American Cr. to Rayado Cañ		
28	22	23	11.42	Rayado Cañon to Uraca,		
31	23	24	22.65	Uraca to La Bahia		
Sept 1	24	25	17.35	La Bahia to Ocate		
2	25	26	20.82	Ocate to Coyote		
4	26	27	12.81	Coyote to Guadalupeita		
5	27	28	12.21	Guadalupeita to Rita de las Lajas		
6	28	29	6.66	Rita de las Lajas to Agua Negra		
8	29	30	19.60	Agua Negra Cañon to San Anton		
9	30	31	5.45	Mora		
10	31	32	21.46	Fort Union.		
			<u>206.62</u>			

Computer: *Mason*

NORTHING.	SOUTHING.	EASTING.	WESTING.	REMARKS.
3.58		⁶ 22 0 19.2 15	12.12	
4.78		3.8	9.94	
	11.26	8.6		
	6.99	8.65		
4.88		8.70		
	16.91	6.13		
	3.57		7.09	
1	12.58		13.58	
11.33			2.94	
1.89			5.00	
4.20			2.76	
	14.63	.95		
	3.38	2.83		
	5.51	19.31		
30.66	75.54	47.43	53.43	
	43.92			
	44.63		5.99	
	44.88	<i>Southing</i>	5.00 <i>Westing</i>	
<i>by Act. Sec.</i>	41.08		5.50	

Number of reep. 630

Hereafter: 633 Revol. per Mile

Station: Camp 3 of Pajaritos. Camp 33

DATE.	NO. OF		DISTANCE BY ODOMETER.	BEARING. $\pm 4\frac{3}{4}$		REDUCED DISTANCE.
	CAMPS.	STATION.		MAGNETIC.	TRUE.	
Sept 29 th	Fulgencio Flagh	I	3434	$\frac{1}{2}$ S 31 E	S 16 $\frac{1}{4}$ E	3417
		II	1280	0 S 15 E	S $\frac{1}{4}$ E	1280
		III	481	0 S 32 $\frac{1}{2}$ E	S 17 $\frac{3}{4}$ E	481
		IV	1330	$\frac{1}{2}$ S 3 W	S 17 $\frac{3}{4}$ W	1324
Sapillo N ^o 33			463	6 S 2 E,	S 12 $\frac{3}{4}$ W	425
		110	6988			
			6133	7.4		
			658		47 $\frac{1}{2}$	
			623		47 $\frac{1}{2}$	
					28	
					14 $\frac{1}{2}$	
Sapillo N ^o 33.		I	2452	S 16 W	S 30 $\frac{1}{2}$ W	2422
		II	1776	$\frac{1}{2}$ S 13 W	S 27 $\frac{1}{2}$ W	1750
		III	2251	S 34 W	S 48 $\frac{1}{2}$ W	2271
		IV	2348	S 48 W	S 62 $\frac{1}{2}$ W	2300
Las Vegas 34			1449	S 59 $\frac{1}{2}$ W	S 74 W	1391
		172	10876			
			6376			
			4546			
			4431			

$105^{\circ} 13' 20.93''$ ^{final} _{approx.}
 Las Vegas $95^{\circ} 35' 27.67'' \pm 0.07''$ ^{final}
 Camp.

Computer:

NORTHING.	SOUTHING.	EASTING.	WESTING.	REMARKS.
	3272.0	985.0		
	1289.0	5.4		
	458.1	146.6		
	1260.9		403.3	
	413.5		93.8	
	6684.5	1137.0	497.1	
		639.9		
	10.56 ^m	1.01		
	2518.0		1483.2	
	1552.4		808.1	
	1505.1		1701.2	
	1062.0		2040.0	
	383.1		1337.5	
	7020.7		7370.0	
	11.00		11.64	

Plotted

Station: Camp 36 Pajaritos

DATE.	NO. OF		DISTANCE BY ODOMETER.	BEARING.		REDUCED DISTANCE.
	CAMPS.	STATION.		MAGNETIC.	TRUE.	
Oct 1 Las Vegas	34	I	752 ²	S 5 E	S 9 1/2 W	736
		II	471 ¹	S 45 W	S 59 1/2 W	447
		III	740 ⁸	S 28 W	S 42 1/2 W	680
		IV	653 ⁴	S 16 1/2 E	S 2 E	627
		V	415 ²	S.	S 14 1/2 W	407
		VI	371 ⁸	S 70 W	S 84 1/2 W	340
		VIa	1110 ⁴	S 20 W	S 34 1/2 W	1066
		VII	153 ⁴	S 13 W	S 27 1/2 W	147
		VIII	1269 ³	S 22 W	S 36 1/2 W	1231
		IX	544 ¹	S 8 E	S 6 1/2 W	540
		IXa	1390 ²	S.	S 14 1/2 W	1362
		X	928 ⁵	S 2 1/2 W	S 12 W	882
		XI	1862 ⁵	S 18 W	S 32 1/2 W	1770
		Bernal Cr	35		1408 ⁸	S 18 W
	14066					

Computer:

NORTHING.	SOUTHING.	EASTING.	WESTING.	REMARKS.
	725.9		121.5	
	226.9		385.1	
	501.3		459.4	
	626.6	21.8		
	394.1		102.0	
	432.6		338.4	
	878.5		603.8	
	130.4		67.9	
	989.9		732.4	
	536.5		61.1	
	1319.0		340.5	
	862.7		183.4	
	1493.0		950.6	
	1093.0		696.6	
	977.0		696.6	
	9810.4	21.8	5042.7	
	15.50		5020.9	
			7.93	

Station:

DATE.	NO. OF		DISTANCE BY ODOMETER.	BEARING.		REDUCED DISTANCE.	
	CAMPS.	STATION.		MAGNETIC.	TRUE.		
Oct 2	35	35a	120 ⁰	N 30 E	N 44 E	120	
		I	137 ⁸	S 70 W	S 84 W	137 ⁸	
		II	850	S 75 W	S 89 W	850	
		III	606 ⁰	S 75 W	S 89 W	606	
		IIIa	183 ⁸	S 75 W	S 89 W	168 ⁸	
		IV	510 ⁵	N 58 W	N 44 W	570	
		IVa	180 ⁵	N 45 W	N 31 W	172	
		V	780 ¹⁰	S 54 W	S 68 W	684	
		VI	1410 ⁸	N 75 W	N 61 W	1298	
		VIa	480 ⁵	S 80 W	N 86 W	456	
		VII	3034 ⁵	S 89 W	N 77 W	2872	
		VIII	2200 ⁶	N 60 W	N 46 W	2068	
		36		290 ²	N 30 W	N 16 W	284

Computer: *Mason*

NORTHING.	SOUTHING.	EASTING.	WESTING.	REMARKS.
86.3		83.4		
	144.2		1370.6	
	14.8		849.9	
	10.6		605.9	
	29.5		1688.0	
410.0			396.0	
147.4			88.6	
	256.2		634.2	
129.5			1135.7	
31.8			454.9	
646.2			2798.2	
1436.2			1487.9	
273.1			78.3	
3660.5	455.3	83.4	11588.2	
3205.2			11504.8	
5.08 ^{ms}			18.18 ^{ms}	
5.08			18.18	
	15.50		7.93	
	11.09		11.64	
	10.56	1.01		
5.08	37.15	1.01	37.75	
	32.07		36.74	

Station: Camp 36 to Camp 37 near Pecos Rio

DATE.	NO. OF		DISTANCE BY ODOMETER.	BEARING. ¹⁴		REDUCED DISTANCE.
	CAMPS.	STATION.		MAGNETIC.	TRUE.	
Oct 3	36	a	1320	N 67 W	N 53 W	1120
		1	562	N 18 W	N 4 W	550
		11	1216	N 27 W	N 13 W	1202
		111	284	N 19 W	N 5 W	277
		37		<u>423</u>	N 28 W	N 14 W
			3801			

1.00 Miles

Computer: *Maxson*

NORTHING.	SOUTHING.	EASTING.	WESTING.	REMARKS.
674.0			894.9	
548.7			38.4	
1171.0			270.5	
275.9			24.1	
<u>388.1</u>			<u>91.8</u>	
3057.7			1323.8	
4.83 Miles			2.09 Miles.	

Station: Station 1 of Sommer near Tecos.

DATE.	NO. OF		DISTANCE BY ODOMETER.	BEARING.		REDUCED DISTANCE.
	CAMPS.	STATION.		MAGNETIC.	TRUE.	
Oct 7	Sta 1	II		N 12 1/2 E	N 26 1/2 E	186
		III		N 65 E	N 79 E	992
		IV		N 63 E	N 77 E	558
		V		N 82 E	N 84 E	372
		VI		N 58 E	N 72 E	527
		VI'		N 58 E	N 72 E	248
		VI''		N 74 E	N 88 E	372
		Adomas		S 28 E	S 14 E	1550
				N 58 W	N 44 W	682
				W	N 76 W	155
				N 45 W	N 31 W	155
				S 67 W	S 84 W	186
		IV		W	N 76 W	589
						6572
					10.382 d.	
Oct 8		I		N 65 E	N 79 E	1178
		II		N 8 E	N 22 E	341
		III		N 17 E	N 31 E	372
		IV		N 4 W	N 10 E	403
		V		N 12 W	N 28	589
		VI		N 25 E	N 39 E	496
		Sawmill,		N 28 W	N 14 W	725
					4154	

Computer: *Wm. S. ...*

NORTHING.	SOUTHING.	EASTING.	WESTING.	REMARKS.
166.5		83.0		
192.9		973.8		
126.5		543.7		
	38.9	370.0		
162.9		501.2		
76.7		235.9		
13.0		371.8		
	1504.0	375.0		
490.6			473.8	
37.5			150.4	
132.8			79.8	
	29.1		183.7	
142.5			511.5	
1541.9	1572.1	3454.4	1449.2	
224.9		1156.6		
316.1		127.8		
319.8		192.2		
396.9		70.0		
588.6		20.5		
385.5		312.2		
752.0			187.5	
2983.8		1879.3	187.5	

Station: From Colomas across Mountains.

DATE.	NO. OF		DISTANCE BY ODOMETER.	BEARING. ¹⁴		REDUCED DISTANCE.
	CAMPS.	STATION.		MAGNETIC.	TRUE.	
Oct 8.				N 33 E	N 47 E	1899
				N 29 E	N 43 E	1214
				N 31 E	N 50 E	354
				N 60 E	N 74 E	525
37.6	9	Camp of 6 th M.		N 56 E	N 70 E	558
				N 76 E	N E	2852
		San Gerónimo		S 65 E	S 51 E	217
				N 1 W	N 13 E	217
				N 8 E	N 22 E	1643
				N 7 E	N 21 E	2170
				N	N 14 E	1705
37.0		Camp of Buddy of Max.		N 87 W	N 73 E	310
						13664

20.00 Miles

Computer: *Mason*

NORTHING.	SOUTHING.	EASTING.	WESTING.	REMARKS.
1295.5		1388.4		
888.2		827.6		
227.6		271.2		
144.7		504.7		
190.8		524.3		
		2852.0		
	136.6	168.6		
211.4		48.8		
1522.9		615.1		
2024.4		778.1		
1654.9		412.2		
90.6			296.5	
8257.0	136.6	8391.0	296.5	
8114.4		8194.5		
12.82 miles		12.80 miles.		

$$\begin{array}{r} 8114 \\ 2983 \\ \hline 11097 \\ 16397 \\ \hline 47 \end{array}$$
 28.

$$\begin{array}{r} 8094 \\ 1879 \\ \hline 9973 \\ 622 \\ \hline 364 \end{array}$$

Station:

DATE.	NO. OF		DISTANCE BY ODOMETER.	BEARING.		REDUCED DISTANCE.
	CAMPS.	STATION.		MAGNETIC.	TRUE.	
Oct 10				S 87 E	S 72 1/2 E	310
				N 24 E	N 38 1/2 E	1488
				N 2 E	N 16 1/2 E	2170
				S 61 E	S 46 1/2 E	682
				N 22 E	N 36 1/2 E	1830
				N 7 E	N 21 1/2 E	1240
				W	N 75 1/2 W	1830
				N 20 W	N 5 1/2 W	527
	Ceballos				10,077	
					11,592 M.	
13		Cueva		S 1 1/2 W	S 16 W	2405
		La Guava		S 30 E	S 15 1/2 E	1850
				S 22 E	S 7 1/2 E	4144
				W	N 75 1/2 W	158
				N 7 1/2 E	N 22 E	158
	Sapello.				8715	
					13,921 M.	

Computer: *Maxson*

NORTHING.	SOUTHING.	EASTING.	WESTING.	REMARKS.
	93.2	295.7		
1164.9		926.8		
2081.1		615.9		
	469.5	494.8		
1471.1		1188.8		
1154.2		454.7		
458.5		777.0	1772.0	
524.6			50.5	
<hr/>				
6854.4	562.7	3976.7	1822.5	
6291.7		1154.2		
0994.4		8.99.4		
	2311.8		663.4	
	1783.2	494.4		
	4108.6	540.7		
39.6			153.0	
146.5		59.2		
<hr/>				
186.1	8203.6	1094.3	816.4	
	8017.5	277.9		

Station: Camp 40 to Camp 44 at Fort Union,

DATE.	NO. OF		DISTANCE BY ODOMETER.	BEARING. $14^{\circ} 40'$		REDUCED DISTANCE.
	CAMPS.	STATION.		MAGNETIC.	TRUE.	
Oct 14			158	S $7\frac{1}{2}$ W	S $22\frac{1}{4}$ W	158
			158	E	S $75\frac{1}{4}$ E	158
			1142	N 11 E	N $25\frac{3}{4}$ E	1142
			2471	N 11 E	N $25\frac{3}{4}$ E	2422
			696	N 17 E	N $31\frac{3}{4}$ E	675
			1045	N 34 E	N $48\frac{3}{4}$ E	1015
			23986	N 29 E	N $43\frac{3}{4}$ E	2370
			3114	N 64 E	N $78\frac{3}{4}$ E	2660
			<u>1193</u>	N 75 E	N $89\frac{3}{4}$ E	1155
			18963			

$$\begin{array}{r} 2058 \\ 127 \\ \hline 2185 \\ 127 \\ \hline 2312 \\ 127 \\ \hline 2439 \\ 127 \\ \hline 2566 \\ 127 \\ \hline 2693 \\ 127 \\ \hline 2820 \\ 127 \\ \hline 2947 \\ 127 \\ \hline 3074 \\ 127 \\ \hline 3201 \\ 127 \\ \hline 3328 \\ 127 \\ \hline 3455 \\ 127 \\ \hline 3582 \\ 127 \\ \hline 3709 \\ 127 \\ \hline 3836 \\ 127 \\ \hline 3963 \\ 127 \\ \hline 4090 \end{array}$$

22.05 Miles

Fort Union to Ocate, Check Meander

Oct 16				N $2\frac{1}{4}$ E	N 17 E	3402
				N 4 E	N $18\frac{3}{4}$ E	756
				N $1\frac{1}{2}$ W	N $13\frac{1}{4}$ E	336
				N 6 W	N $14\frac{3}{4}$ E	546
				N 6 W	N $8\frac{3}{4}$ E	546
				N 1 E	N $15\frac{3}{4}$ E	3918
				N 20 E	N $34\frac{3}{4}$ E	378
				N 15 E	N $29\frac{3}{4}$ E	1890
						<u>14772</u>

632 / 11772 (1815)

$$\begin{array}{r} 11772 \\ 632 \\ \hline 5440 \\ 5064 \\ \hline 3782 \end{array}$$

Ocate.

Computer: *Max Son*

NORTHING.	SOUTHING.	EASTING.	WESTING.	REMARKS.
	146.2		59.8	
	40.2	152.8		
1028.8		491.3		
2181.8		1052.6		
574.1		355.2		
669.2		763.1		
2819.0		2652.0		
518.7		2618.9		
		1155.0		
<hr/>				
7781.8	186.4	9240.9	59.8	
7695.4		9181.1		
12.00 M.		14.60 Miles		
3252.9		994.6		
716.9		243.0		
327.0		77.0		
528.0		139.0		
539.6		83.0		
3772.8		1068.3		
310.6		215.5		
1641.1		937.7		
18089.2		3753.1		

Did. ^{18.59}~~18.59~~ 17.51
 Northing ~~13.65~~
 Easting. ~~4.88~~ ^{5.93}

Number of Rev.
 per mile 633

Station: Lengths in Statute Miles

DATE.	NO. OF CAMP. STATION.	DISTANCE BY ODOMETER.	BEARING. MAGNETIC.	TRUE.	REDUCED DISTANCE.
Lat. of Parallel		35°	56.718	4 mts	14.18 = 1 mts.
		36°	56.019	4	14.005 = 1 mts
		37°	55.304	4	13.83 = 1 mts
		38°	54.571	4	13.64 = 1 mts

Degree of the Meridian

Lat. of middle point.	Stat. Miles
35°	35° 68.929
40°	40° 68.987

of Degrees of Lat. & Long. in different
Computer: Latitudes

	NORTHING.	SOUTHING.	EASTING.	WESTING.	REMARKS.
Degree of the Meridian					
Lat. of middle Pt					
Pueblo	104° 36'	47.4"	f Ruffner	Q. Kauff	a = approx f = final
	38	15	42"		
Pueblo	104° 36'	47.4"	f Ruffner	Q. Kauff	
	38	15	42.80	f Kauff	
Trinidad	104° 30'	01.29	f	f Kauff	
	37	10	46.48	f	
Cimarron	104° 54'	58.32	f	f Kauff	
	36	30'	09.95	f	
St. Julian	105° 00'	51.15	f	f Safford	
	35	54	21		
Last Vegas	105° 13'	26.93	f	f Kauff	
	35	35	27.67 (±0.07)	f	
Santa Fe	105° 56'	45.15	f	f Safford	
	35	41	19.29	f	