FIELD NOTE BOOK
CROCKER LAND EXPEDITION
1913-1915
No. 58
Seismograph
1916-18
(E. C. Houy)
Geology
Utah, Greenland
Seismographic Record
(6) 19 October, 1916,-

Wiechert Apparatus

E.O. Hovey,
Observer
<table>
<thead>
<tr>
<th>Item</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Boxes</td>
<td>1</td>
</tr>
<tr>
<td>Sides of frame + stnt</td>
<td>1</td>
</tr>
<tr>
<td>Top &amp; bottom of frame ; drum base</td>
<td>1</td>
</tr>
<tr>
<td>Pendulums</td>
<td>2</td>
</tr>
<tr>
<td>Weights &amp; feet</td>
<td>1</td>
</tr>
<tr>
<td>Arms &amp;c</td>
<td>1</td>
</tr>
<tr>
<td>Lamps &amp;c</td>
<td>1</td>
</tr>
<tr>
<td>Paper</td>
<td>1</td>
</tr>
<tr>
<td>Batteries</td>
<td>1</td>
</tr>
<tr>
<td>NH4Cl</td>
<td>1</td>
</tr>
</tbody>
</table>

10

Apparently, the only boxes that had been unpacked were those containing the sides of the frame and one of the boxes of weights, while that containing the top and bottom may have been partly opened, but it had not been unpacked.
6 October, 1916. With Mr. MacMillan's cordial sanction, encouragement and help, and Captain Cowie's help, I began overhauling Green's boxes in search of the parts of the seismograph and literature pertaining to it. Found some of them. At least two of the boxes containing it had never been opened. Also found a box containing lamp and similar extra parts which had never been opened.

7. I. Found box containing needle arms, damping apparatus, drums, etc. Whole of registering apparatus I had never been opened and some of the steel parts were badly rusted by their three years in their packing.

9. I. Worked on machine all day and made much progress, being greatly helped by picture of assembled apparatus in catalogue of Spindler & Hoyer in W. M. Mac fortunately found thrown away in the shed in front of the house.

10. I. Hammered by lack of directions and rusted parts. Ten boxes in all, only 3 of which had been opened.
11. X. Still searching for literature, but unsuccessfully.

12. X. Captain Corr. repaired thrust arm with a new needle in place of steel point which was rusted off.

13. X. Got apparatus all set up today—set up in my room.

14. X. Connected up clock with the seismograph.

15. X. Smoked first paper and put it onto the drum. Got record of movements of floors of house.

16. X. Working over adjustment. Ran wires from clock in my room to room where seismograph is to stand.

17. X. Still running in my room for sake of synchronizing clock and graph. Mac and Captain Corr. cleaned our old meat room at north corner of house for reception of the instrument.

18. X. Captain Corr. leveled floor of room. Then he and we...
Of walls with an old turf lighting -

As a protection against frost.

I have established the meridian line

there with his theodolite. Captain

Cove and I set up the frame - Jot small

helped adjust the steady mass in equi-

librium. I put in the arms, dunn

eetc. The iron sub-bases rest on proper

gravel and are imbedded in the

game material. I packed sand around them and then forced on

water so that the connection is proper

coldly together.

19.X. Got mechanism to running

by removing all oil from the bear-
ings and wound up the weight arm

and the worm of the drum. I am burning a kerosene stove in

the room to reduce the cold there.

20.X. Running experimentally

Full damping.

21.X. Informed Mr. Mac Millan that

The seismograph was now running

"officially" but by afternoon the

time record was only of gear because

the electromagnet did not work

properly. No shocks recorded.

22.X. No record. Magnet not doing well
No record means no shock recorded.

23. X. No record. Magnet works some times & sometimes it doesn't.
Temp. room at 5'6" above ground, 71
2 P.M. 24° min for 24 hrs. 15°

24. X. Fused over electromagnet & didn't something that made it run for several hours.
No record. Temp. 12 M., 23° min 14°

25. X. No record. Away all day.

26. X. No record

27. X. No record. Away all day.

28. X. No record. Temp. 11 A., 23° min 20°

29. X. No record. Temp. 12 M., 20°, min 18°

30. X. No shock recorded. Temp. 11:40 A., 33°, min 20°
Struck right adjustment for magnet & got it to going all right, apparently

31. X. No record. Temp. 10:50 A., 23° min 17°
Fine marks ok & I fired the sheet with diluted collodion, in lack of shellac. Increased rate of clock work by raising weights & fans in governor about 1/3 inch.
1.11. No shock. Temp. 10:33, 30.5° Min. 23.0°

New sheet on at 10:33 a.m. Old sheet showed failure of magnets from 9:54 a.m., but magnets began working all right on new sheet.

Room is at north corner of the house and has been used hitherto for the storage of meat. The boys called it the "Refrigerator." It is a part of the shed running along the southwest front and northwest side of the main house. Dimensions: 7'3" from S.E. to N.W. by 5'9" from S.W. to N.E. and from about 6' high on N.W. side to 7' high on S.E. side against the house. Floor is the solidly frozen ground composed of delta-fan gravel containing many pebbles and boulders. This was leveled off approximately then the iron feet for the instrument were imbedded in the gravel and fastened securely by freezing in by means of water poured over the ground that had been disturbed during the setting of the iron cups. The ground of this room does not thaw out even in the summer. As a protection against wind and extreme cold and the formation of frost, the
The whole upper floor and ceiling of the room were lined with a tent-like covering of thin drizzling. On three sides the room is double walled and covered with Cabot sheathing and asbestos roofing paper, except for a window—10" x 10" in size—in the N. We used a partition forming the side in of single boards, separating room from rest of shed.

Mr. MacMillan determined meridian across middle of space chosen for seismograph by means of a first-class theodolite transit. We marked the line with a cord stretched between nails driven into the walls where the meridian intersected them, the point being located with the telescope. When the frame was set up, I got the outer edge of the N-S arm parallel to the cord within less than 1/8 inch, measuring with a carpenter's jointed wooden two-foot measure. Balanced the heavy mass in unstable equilibrium, secured it thus with the centering set screws, connected the thrust arms with the needle arms and loosened the set screws.

Placed a Weather Bureau star-
Land (Green) minimum thermometer on the southwest partition wall 5 ft above the ground (floor)

Temperature of room is moderated by burning a sound-flame kerosene lamp in one corner.

21 XI. Off at 23:50 nonum. Temp. 31° min., 30° max. On at 07:19 am.

Magnet failed to work perfectly, on last four hours of old sheet, but started all right on new.

21 XI. 3:25 pm. Clock 61 sec. slow of Bond chronometer.

28 XI. 4:23 pm. 149 sec. slow, lost 788 seconds in 7 days = 12 7/8 sec per day

Shortened pendulum, two turns.

Thumb-screw and at 4:28 pm. It was exactly 5 min slow of chronometer

4 XII. 6:48 pm. 245 sec. slow. Gain 7 5/5 sec. in 7 days = 7 1/4 sec per day.

Lengthened pendulum 4/5 turn + started again 6 min 42 sec

= 402 sec slow at 8 pm.

(7 XII 10:37 - 7 min 38 sec slow)

Comm. on 11

On at 10:14:30 - not working -
Temp. 21.7° min 18° - no heat.
Wind clock at 10:10. Tested battery and clock with till telegraph sounder - both O.K.

4. Nov. Off at 10:40 a.m. Temp. 22° min 19°. Store not burning 24 hrs. Nonecord. Magnet did not work till 1:45. Yesterday when I adjusted screw and it worked all right till 7 this morning. Then with occasional breaks till 10 a.m. normal off to 10:29 - then O.K. again. On at 10:44:30 a.m. Marking ok changed to no damping at 3 p.m.

The connecting arms (Hebel arms) are adjusted as when received and the little thrust pins are on the second joints from the outer ends of the needle arms giving a magnification of 80(?). In all respects the adjustment of the apparatus is exactly as when received except for strengthening the joint or the armature of the magnet and reducing the distance through which armature moves and increasing full of spiral...
pring in order to get force enough to hold the needle and thrust pins in place against the connecting arms. Also steadied the governor a little.

Captain at my request prepared two long pegs on which to hang papers during changing operation. Time reduced from 4½ min to 1½ min. + convenience needed.

5 Nov. Off at 10:14:30 a.m. On at 10:16:05.
Temp 90° min 8°
No record. Time marks missing from 11 to 11:20 and one, two or three missing several times afterward during 14 hrs. Marking O.K. this morning. Time marks are almost exactly 1 cm apart, twenty of them lacking only 1 mm of being 20 cm apart.

6 Nov. Off at 10:23:30 Temp 30° min 1°
Time marking considerably interrupted and not very satisfactory.
No record of blocks.
On at 10:25:30 a.m.

7 Nov. Off at 10:04 a.m. Temp 10.5° min 5°
All hours well marked. Most of minutes dits, but some not at all.
No record
On at 10:08 after adjusting needle.
8 Nov. Off at 9:40 a.m. - None recorded
Temp. 17° min. 65°
Time marks poor and lacking for last several hours, 2 a.m. being last one
On at 9:42
Added 14 lb. of H20 to one cell later 10:72 a.m. 10:16:30 - Tiller took showed clock to be O.K.

9 Nov. Off at 10:34 No record
Temp. 26° min. 8°
No time marks after 10:01 a.m. yesterday
On at 10:36 a.m.
Tiller took showed clock to be all right

10 Nov. Off at 9:50 No record
Temp. 27.8° min. 24.8°
No time marks whatever
On at 9:52 - 40 a.m.

11 Nov. Off at 10:16 No record
Temp. 23° min. 21.7° No time marks
On at 10:18:00

12 Nov. Off at 9:52:20 None record
Temp. 11° min. 9.9° No time marks
On at 9:54:20 Made marks at 9:56.5 + 50

13 Nov. Off at 10:4:15 - None record
Temp. 87.1° min. 8° No time marks
On at 10:6:30 - Marked at 10:8 + 59
Clock - conf., 7.

11. XI, 7:24:36 Clock slow 8 min 24 sec (504 sec). From chronometer a loss of 10 2 sec in 7 days - an average 7 14 9 sec per day.

Shortened pendulum two turns.

Started clock again at 7:34:20 it has 9 min 40 sec (580 sec) slow - rounded clock.

13. XI, Moon clock slow 8 min 35 sec.

Apparent gain 65 in 2 days.

14. XI, 9:45 A.M. Slow 8 min 5 sec.

Gain of 30 sec. Lengthened 1 turn.

Started clock 9 min 28 sec slow.

15. XI, 10:15 a.m. Slow 9:17 sec. Gain 11 sec.

16. XI, 10:10 a.m. Slow 9:06 sec gain 11 sec.

(Faint last night outside -11°)

Clock hangs against dining room partition. No fire after 27 P.M. Cool after midnight.

17. XI, 12:15 a.m. Slow 8 min 54 sec. Gain 12.5.

Lengthened pendulum 1/2 turn.

Started clock 10 min 32 sec slow.

Wound.

18. XI, 10 a.m. Clock 10 min 48 sec slow. Watch, watch 16 sec fast of chronometer.

Start clock 10 min 32 sec slow of chronometer.

No change from yesterday.
14: XI Off at 10:16:30 No record
Temp 9.8° min 8.2° No time marks
On at 10:19
Marked 10:20 + 21

15: XI Off at 9:52:15
Temp 12° min 9.6°
On at 9:53:35
No record
No time marks
Marked 9:56 + 27

16: XI Off at 9:50
Temp 9° min 5.5°
On at 9:51:50
No record
No time marks
Marked 9:54 + 55

17: XI Off at 9:57:15
Temp 6° min 4.4°
On at 9:52:40
No record
No time marks
Marked 9:54 + 55

18: XI Off at 9:40
Temp 5° min 4.2°
On at 9:41:32
No record
No time marks
Marked 9:43 + 44

19: XI Off at 10a
Temp 9.5° min 4°
On at 10:1:40
Clock 10min 29sec slow
No record
No time marks
Marked 10:23 + 44

20: XI Off at 10:39a
Temp 7.5° min 6.5°
On at 10:41:42
No record
No time marks
Marked 10:44 + 45
Clock 10°22 sec slow
Lengthened 2 points
Lighted store started again 11min 30sec 10:20 + 2 sec at 11min 20s
21 XI. Off at 10:12 a.m. No record.
Temp. 10° min. 9.5° (screw out) No time marks
On at 10:14
Clock 11 min. 30 sec. slow (watch)

22 XI. Off at 10:39 a.m. No record.
Temp. 16° min. 6°
 Took off magnet re-adjusted time.
On again at 12:43:10 p.m.
Clock 11 min. 30 sec. slow (watch)

23 XI. Off, 10:19:40 a.m. No record.
Temp. 25.5° min. 19.1°
 On again 10:21:30 a.m.
Clock 11 min. 30 sec. slow (Captain's count)

24 XI. Off at 10:17 a.m. No record.
Temp. 21.5° min. 21.5°
 Clock 11 min. 30 sec. slow (watch)

25 XI. Off at 10:45:45 a.m. No record.
Temp. 10° min. 9° (screw out)
Clock 11 min. 30 sec. slow (watch)

26 XI. Off, 10:55:50 a.m. No record.
Temp. 23° min. 22°
 On 11:00:20
Clock 11 min. 30 sec. slow (Captain's count)

27 XI. Off, 10:49 a.m. No record.
Temp. 12° min. 10°
Clock 11 min. 30 sec. slow (watch)
14 Hour mark at beginning 3' 1st min.
27-57. Moved minute hand forward 1 min. to make hour contact come at beginning 1st minute. - Clock now 10 min. 30 sec. 1/2 m mark came 11/2 sec. 50 sec. - Turned screw from me + 0.1K + the 1 p.m. mark looks all right.

28. XI Off 10:46 a.m. off. No record.
Temp 24° min. 13°. On 10:47:50
Clock 10 min. 29 sec. slow (watch).

29. XI Off 10:15:30 a.m. No record.
Temp 75° min. 75° (bore out). On 10:17:05
Clock 10 min. 30 sec. slow. (9 sec. come) Wound.
Righted about at 2:50 p.m.

30. XI Off at 10:27:08 No record.
Temp 15° min. 12° On 10:28:56
Clock 10 min. 30 sec. slow (watch).

Temp 28.5° min. 14.5° On 10:25
No time marks after 3:16 a.m. Battery zinc eaten off. Connected again + clock at 10:53 a.m.
Clock 10 min. 30 sec. slow (watch).

Temp 14.5° min. 14.5° (highest) On 11:07:53
Time marks ok.
Clock 10 min. 30 sec. slow (watch).
3-XII. Off 9:48 a.m.  
Temp 34° Min 14.5°  
None

Parker began to run off the drum at 10.40 a.m. and was one line of 10.40 a.m. 
Block 10 min 30 sec slow. (H.C. count) 
I'd less than 1 sec change in 13 days as 
compared with the Muscatine chronometer.

4-XII. Off 9:57:30 a.m. 
None

No record (H.C. count)  
On 9:59:06

to weather bureau station

5-XII. Off 10:56:06  
Temp 10.5°  
No record

On 10:57:30

Round and set clock at 12:07:12, with 
chronometer by Mac Millan's count.

6-XII. Off 10:42:30 a.m. 
Temp 11°  
None

On 10:48:04 a.m.

Main the mine from field equipment.

7-XII. Off 10:27:30 a.m.  
None

On 1:14 p.m.

Second zinc gone betw 10:27 + 11:14. Put in new zinc + firstmine is 1:32 p.m. but 
third zinc corroded off at 3:34 p.m. Leav- 
ing only one cell in commision + may 
not would not work on this. Fixed up 
an Edison 250 cell with 0, 14.1 + con- 
ected it with the other. Worked all night, 
beginning 10:18 a.m. & B.C.

See note under yesterday's date.

On 10:56:30
Temp. 3°
Lighted stove and at 12:45 temp. 18.5°
Temp. outside at noon was -8°-calm

Clock agrees with chronom. within a second
according to G.C.'s count. Maybe 5 sec slow.
Temp. 2:30, 25°; for I had moved pointer
back about that much to adjust the
minute contact. Temp 8:1. 29°

9. XII. 16 Off 10:52:20 a.m. No record
On 10:53:40 a
Temp. 20.2°

On 10:25:20 a. (robin) Temp. 7.6°
Clock 0.5 sec slow. G.C. agrees. Normal.

11. XII. Off 10:29:30
On 10:31:20 Temp. 3°
Lighted stove. 16° at 11:20; 19° at 21: 20.2° at 8
Moved minute hand back one space to adjust hour contact, making clock 59 sec slow

12. XII. Off 10:34:30 a.
On 10:36:20 Temp. 19°
Time marks somewhat interrupted till 1 a.m.
Then hour marks only for 2, 3, 4, 5, 6 a.m. then
None at all.
13 XI. off 10:10. Some kind of record from ca. 2:54 to 2:55 p.m. of the 12th affecting principal by the N-S component & scarcely visible in E-W. Any does not look like an earthquake record, but I have no knowledge anyone having touched the instrument at that time. Presently put back of sheet.

On 10:11:30 Temp 23.1°

14 XI. off 11:10:30 None recorded

On 11:17:05 Temp 24°

Time marks intermittent - minutes marked for ca. 1/2 time between 2:30 p.m.

15 XI. off 10:17:30 No record

On 10:19:25 Temp 15° (no fire)

Time marks intermittent - reading during day and after midnight.

Wound clock - 5 8 sec. slow - P. clean

12 m. 24° with fire.

16 XI. off 10:30 No record

On 10:32:20 Temp 24° (no fire)

Paper began to run of drum ca. 7:30 p.m.

Time marks intermittent - 1/4 hour

12 - 7, m. 9 + 10 - Minutes 5:30 - 4, 6:49, 7, 8:23 - 8:52 p.m. After 11 p.m. trace of E-W component over arms + is composed with the N-S
17.XI-16 off 10:40 a.m. None.

Time mark absent altogether lacking except 11, 12, 1, 2, 2:39 - 3 p.m.
Clock stopped 8:45 a.m. Why?
Started it again at 10:11:12 a.m. 8 sec fast.

18.XI off 10:26:35

Time marks: hours - 11, 1 - 1 inel, 4+5
Minutes continuously 4:16 - 10:11 m.
Temp 19.5° (watch).

19.XI off 10:54:40 a.m

Time marks intermittent - more so than yesterday -

20.XI off 10:50 a.m.

No time marks except for 10:57 - 11:01 a.m.
On 10:51:15. Temp 9.5°
Wound clock +7 sec fast. -9°C count.
Cleaned battery plates & time piece. Clock resumed all night on 11/20.
Today string lighted stove, raising temp. to 23°-28°.

21.XI off 10:42

Time marks OK. but paper ran up on edge of drum early this morning -

12 XII. Off 10.46:05 a.m. No shocks.

Everything all night.
On 16.48:10 Temp. 23.2° (outside -24°)
Temp. 21.30, 21.6° 8.30 21.5° 11.30 18.5°

23 XII. Off 10.49 a.m. No shocks.
On 16.51:10 a.m. Temp. 15.5° (outside -29°)
Temp. 18° 6.45 7.21°

24 XII. Off 11.02:16 a.m. No shocks.

Paper begins run upon noon drum at 5.37 a.m. confusing later lines by crossing.
On 11.03:40 a.m. Temp. 16.5 (outside -33°)
4.30 p.m. 8° snow falling out lighted up again - 57, 14.5°

25 XII. Off 11.02 a.m. No shocks.
On 11.01:45 Temp. 13.6° (outside -31.5°)
Mound clock at 10 a.m. 6 am first rec.

Counts by both G.C. + B. B. M.
Temp. 1 h. m. 14.5° 4.30 3° (five and half lighted again)
57. 13°

26 XII. Off 11.04 a.m. No shocks.
On 11.05:30 Temp. 14.5° (outside -24°)
74. 18°. Pendulum sensitive, light touch

27 XII. Off 10.27:35 a.m. No shocks.
On 10.29:10 Temp. 18° (outside -27°)
4 h. 18.2° (-29.5) 9 h. 19.2°
27 XI. D.B.M. reports to-day that the chronometer is 1 min 25 sec fast and that its rate is 1/10 sec gain per day. The rate of the clock is now 1/10 sec loss per day.

28 XII. Off 10:43:30 a.m. 250 shocks. Began to run up an arm of dam at 4:02 a.m. Time marks O.K.

On 10:45:20  
Temp. 14.1° (outside -21°)

29 XII. Off 10:50:15 a.m. O.K. No shocks.

On 10:51:50  
Temp. 12.2° (outside -30°)

6 p.m. 18° (-26.3°)

30 XII. Off 10:43 a.m. O.K. No shock.

Temp. 14° (outside -14°)

On 10:44:30 Lighted stove. Temp. 17° at 11:25 a.m. 11 p.m. 28°. Wound clock.

31 XII. Off 11:1-30 a.m. No shock.

Time marks o.k. except minute marks missing: 11:21-32 min a.m., 12:2 + 2 min.
2:2-46; 3:13-16; 18:25 p.m.; 7:3-58 a.m.
8:3-5 a.m.

On 11:2:50  
Temp. 24° (outside -14°)

Sent 11 p.m. 24°.

Aim now closing door door ariight and sleeping in cold with may not should not change rate of clock.
1917

1 Jan., 1917. Off 11:24 a.m. No shocks.

Motor stopped at 3:18:50 this morning. Started it again at 9:33. Fire was out, the lamp having gotten to smoking badly in the night. Asking's notebook turned the lamp down so low that it went out. He may have touched the machinery in some way. Started on again all right.

Perhaps the cold stopped it, but it was 10° at 9:33 and the motor has run at lower temperatures. Fine marks O.K.

On 11:4:10, Temp 10° (Outside 18°)

Lighted stove. Temp 11:30 a.m., 13°; 12:30, 14°; 1:30, 18°.

10:30 p.m. 24°


Some unimportant intersection of minute marks, followed by停车 of

a minute. Motor inclined toward S.W.

Amen. 4 to 5 p.m. causing needle points 5
doing about 2 in each end returning 5


Disconnected on account of other

work and 10° at 2:43:40. Temp 3° (Outside 16°)

Stove not burning since yesterday evening, oil accelerator lighting again at 2:50 p.m. Temp 3:30 10°
clock 9:30 at 8:40. Meaning a gain of 3.5 sec. in 9 days (7.48 h.m.) He now reports the Bond Chronom
et al being probably 6 min 30 sec fast, by observation on Aldebaran. He is recalculating the rate.

4 Jan. Off 10:36:30  No shocks
Motor ran more rapidly than usual at first, slowing down gradually after 7 A.M., not absolutely regular.
On at 10:38:30  Temp 17° (Outside -11°)
Round clock 6 p.m. 20°, 10:38:30 (Outside -12°)
Siphon store - Temp 11 1/2 - 15°

5 Jan. Off 10:58  No shocks
Motor ran all right
Minute marks about 11:02 - 11:10 and -
Planned since y battery + Marks on 5 a.m.
6:01 a.m., then minutes fail altogether
+ 7 a.m. is only later from mark
On 10:07:30  Temp 21° (Outside -15°)
Received Edison cell using Ca 1/4 lb.
Ni, Cl + started in one on 11:14 7 A.M. 4:10 A.M. 11:6

6 Jan. Off 10:50  No shocks
Time thanks somewhat interrupted
up to 1:01 a.m. + then looking altogether
On 10:51:45  Temp 7.6° (Outside -14.6°)
Siphon store 11:40, 12:15, 1:15, 2:45 a.m. 17°
7 January, Off 11:24 a.m., 710 shocks.
Paper began to run up on rim of drum at 5:12 a.m. Time marks missing except the noon mark till 12:20 when I took
renewed notes in Fendorff cell. Then:
On 11:26:5 Temp 17.8° (Outside -16°)
12 m 20.5° 10:30 2.4°

8 January. Off 10:43:15 a.m. No shocks.
Time marks good. Paper began to run up on rim of drum at 7:00 a.m.
Tested pendulum at 10:43:30 yesterday morning. Fairly sensitive.
On 10:44:45 a.m. Temp 10.5° (Outside -13.5°)
Store out 12:15 A.M. Lighted store 12:40 -2.1°
5:45 21.5° 9:30 23.6°

9 January, Off 10:47 a.m. No shocks.
Time marks O.K. till ca 4:30 a.m., then minute marks somewhat interrupted till ca 8:30 a.m.
Paper began to run up on rim ca 7:50 a.m.
On 10:48:30 a.m. Temp 10° (Outside -12.5°)
Store out. On account of frequent smoking retired the round flame stove that I have been using and started a little Florence flat
flame stove. Temp 11:15 a.m. 14°. 6:45 p.m. 8.5° 16°
Round clock at 10 a.m. 11 sec, fast. BPM count.
Gain 1.5 sec. in 15 days (Bond chronometer)
10 Jan, 1917. Off 10.45 a.m. No shocks.

Time marks except 7.57-59 and 8.11-59. 9.2 a.m.

On 10.49.35 Store out Temp. 8.2° (Outside -6°).

Lighted fire 11.23. 12 m. 13.5°.

11 Jan. Off 11.30 a.m. No shocks

Time marks on 1.7 am + minute marks missing from 7.02 to 11.27 a.m. midnight.

On 11.31.30 Temp. 19° (Outside 0°).

Put flourence stove in room from mine

12 m. 21° 11 m. 21° 11 m. 21°

12 Jan. Off 10.38 a.m. No shocks

Minute marks missing 11.40 - 1.05 p.m. + 6.45 a.m. on

Time marks all present as usual.

Paper began running on min. drum 6.49 a.m.

On 10.39.40 a.m. Temp. 17° (Outside -6.5°)

12 m. 30° 10 m. 30°. 27°

13 Jan. Off 10.45 a.m. No shocks

Time marks much interrupted. One half

missing.

Paper began running on min. drum 7 a.m.

On 10.46.30 a.m. Temp. 20° (Outside -8°)

Coffee pot had corroded again in Edison cell. Put in new ones + started along 0.11 about 11.30. Vaselined the

cookies above the liquid in the cell.

+ left the vulcanite tines off to avoid rigid formation of CuCl2. This cell
was put into commission on July 15th. Temp 40°F 2½, 22°F. Noted a slow sliding of heavy mass toward N.W. due heating up of store.

14 January. Off 10.55 a.m. No shocks. Everything a.m. since battery cell was fixed. The mass of the heavy mass due to heating up of store reached its maximum 1:16 1:15 p.m. Turned down light and room cooled off more rapidly than it had warmed up. So that heavy mass had come back to normal position by 1:48 p.m. It took about 1 hr. to swing out and ½ hr. to come back.

Stone removed from room 11 a.m. to 10 a.m. Temp. at 10 a.m. 10.5°F

On 10:57:30 a.m. Temp 27.2°F (Outside 22°F)

5°F 24.3°F 11.2°F Normal clock 10:50 a.m.

15 Jan. Off 10:41 a.m. O.K. No shocks

On 10:42:30 a.m. Temp 32°F (Outside +1°F)

11:50 28°F 11:10 22.2°F

16 Jan. Off 10:10 ½ a.m. No shocks

Off till 9:58 a.m. when flashing began. Shin

On 10:15:45 Temp 18°F (Outside -2°F)

12:30-2:30 5:35, 15°F 11:18 18°F
17 Jan. Off 10.52 a.m.
O.K.
On 10.53 a.m. Temp. 75° (outside -11°)
Store cont. filled & lighted 11.20. 11°; 16.37 - 31°; 17.50, 76.7°

11.21

18 Jan Off 10.25.15
No shocks
Minute marks missing 5.02 - 6.02 A.M. 7° - 823.
9.02 - 11.03 P.M. 6.02 a.m. Paper began to unroll ca 6.47 a.m.
On 10.26.45 a.m. Temp 2° (outside -16°)
Stove out. Lighted up again at 10.55 a.m.
11.15 - 17.5° 2.30 p. m. 22° W. 38.5°
Cleaned Edison zinc + 0.45 a.m. 11.14

19 Jan Off 10.46 a.m. No shocks
Temp was down to 18° during early a.m.
Time marks (minute) somewhat intermixed.
Edison cell seems to drop rapidly on 8th cell.
On 10.47.25 a.m. Temp -34.5° (out -13.7)
Round clock 6.45 a.m. 10 sec fast by J. C. (Q. 1.7)

Removed Edison cell + cut down one of its wires so that it would go into a
Finaly cell. Got this done about noon and the time marks came out.
Temp 12. m 28°; 5.30 p.m. 25.8°, 11.1 2°

20 Jan. Off 10.45 a.m.
No shocks
Time marks O.K. beginning 12.32 a.m.
On 10.46.35 Temp -22.3° (outside 11°)
1.45° 42° 1000 H. -1° stove out.
<table>
<thead>
<tr>
<th>Date</th>
<th>Time(s)</th>
<th>Description</th>
<th>Temperature</th>
</tr>
</thead>
<tbody>
<tr>
<td>21 Jan. 1917</td>
<td>Off 10:36:10</td>
<td>No shocks</td>
<td></td>
</tr>
<tr>
<td></td>
<td>O.K.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>On 10:37:25</td>
<td>Temp. 6.1° (outside -6°)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Store in again - 12:46:30, 20.35:30, 20.7°; 11P. 18.8°</td>
<td></td>
</tr>
<tr>
<td>22 Jan.</td>
<td>Off 10:36:10</td>
<td>No shocks</td>
<td></td>
</tr>
<tr>
<td></td>
<td>O.K.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>On 10:37:20</td>
<td>Temp. 17.8° (outside -8°)</td>
<td></td>
</tr>
<tr>
<td>23 Jan.</td>
<td>Off 10:44:30</td>
<td>No shocks</td>
<td></td>
</tr>
<tr>
<td></td>
<td>OK till paper began to run upon rim y drum at 5:27 a.m.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>On 10:46:40</td>
<td>Temp. 25.2° (outside +11°)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>5:30p 28° 10:45p. 26.9°</td>
<td></td>
<td></td>
</tr>
<tr>
<td>24 Jan.</td>
<td>Off 10:24</td>
<td>No shocks</td>
<td></td>
</tr>
<tr>
<td></td>
<td>OK till 8:04 a.m when paper began to run upon rim</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>On 10:25:10</td>
<td>Temp. 25° (outside +2°)</td>
<td></td>
</tr>
<tr>
<td>12:20p. 46°</td>
<td>6:30p 25.8° 10:30p. 45.2°</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Herind clock 8:45 a.m. 8:00 am fast by with 8:30 M. + F.C. count.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>O.K.</td>
<td>Motor does not keep constant rate</td>
<td></td>
</tr>
<tr>
<td></td>
<td>On 10:23:35a.</td>
<td>Temp. 17.5° (outside 5°)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>OK at marks. Paper began running up at 5:46 a.m.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>On 10:47:50</td>
<td>Temp. 36.5° (outside 8°)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>10:45 a.m. - 14.5° (store out)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
27 Jan. 1917. Off 10.33-05  No shocks
          O.K.
On 10.34.30  Temp 19° (outside 14°)  Store out all day
6h., 20.5°; 10.3-0h. 17°

28 Jan. Off 10.54  No shocks
             O.K.
On 10.55.10  Store out all day
Ca 4h. 18°; 11h. 17°
Temp 18.4° (outside 11°)

29 Jan Off 11a  No shocks
             O.K.
On 11.1.20a  No fire
Wound clock. 9 sec fast. 8p. 15.1°; 11p. 12.8°
Temp 18° (outside 15°)

30 Jan Off 10.28 a.m  No shocks
O.K. till fire began to smother at 5:09 a.m.
all males present.
On 10.30.10 a.  Temp 14° (outside 0°)
1h. 11.2°; 10.45p. 10°

31 Jan. Off 10.57.5 a  No shocks
             O.K.
On 11.0.30  No fire
Temp 7.3° (outside -5°)
1.45p. 7°
February, 1917. Off 11:34 a.m. No shocks

0 a.m. except that paper began to run up

On 11:35:10 a.m. Temp 6.6° (Outside 1.5°)

3:45 p.m. 10:30 p. m. 8°

No fire

2 Feb. Off 10:35 a.m. No shocks

O.K.

On 10:36:10 Temp 6.3° (Outside -0.5°)

Lighted stove 11 a.m. 11:15 a.m. 22.5° 1:30 p.m. 1:50

11 a.m. 25°

3 Feb. Off 11:49 a.m. No shocks

O.K. Fire went out in last a.m.

On 11:10:10 a.m. Temp 9.5° (Outside -4.5°)

Round clock 9:33 a.m. 10 a.m. 10:30 a.m. 11 a.m. 12:45 p.m. 1:40 p.m. 2:30 p.m. 2:17 p.m.

Lighted stove 11:30 a.m. 12:45 p.m. 1:40 p.m. 2:30 p.m. 3:26

4 Feb. Off 10:28 No shocks

O.K. Fire went out early a.m.

On 10:29:10 Temp 7.8° (Outside -10°)

10:29 p.m. 8.1°

5 Feb. Off 10:43:15 No shocks

O.K. Telegraph began running at 6:33 a.m.

On 10:44:30 Temp 5° (Outside 8°)

5:30 a.m. 8:55 a.m. 11:40 a.m. 8:16 a.m.

6 Feb. Off 10:39 a.m. O.K. No shocks

On 10:40:10 No fire, Temp 4° (Outside -1°)

Newel & lighted stove noon 1:40 a.m. 10:45 a.m. 1:26 a.m.
7 Feb. Off 10:48 a.m. OK  No shocks
On 10:49:10
5:15 F. 20.8°  1 1/2. 19°

8 Feb. Off 10:52:10 a.m. OK  No shocks
On 10:53:15
Temp 16.1° (Outside 16°)
Round clock 10:40 13 seconds fast
of the Bond Chromon. Q.C. count
2:25 F. 20.0°  10:15 F. 17.1°

9 Feb. Off 10:32 a.m. OK  No shocks
On 10:33
10 a.m. 6.8°

10 Feb. Off 11:3:55 a.m.  No shocks
Dropped some minute marks just before and after
3 a.m. Paper began running at 3:21 a.m.
On 11:4:15
Temp 33.8° (Outside -4°)

11 Feb. Off 10:36 a.m.  No shocks
OK but paper began running up at 6:32 a.m.
On 10:37:05 a.m.  Temp 23.8° (Outside -15°)
11:30 a.m. 26.5°  12:01 22.5°  10 F. 24.1°

12 Feb. Off 11:30:10  No shocks
OK till 11:23 am; after which no time
marks appear
On 11:31:35
Temp 18° (Outside -15°)
Renewed one after one unsuccessful
attempt at freeing two old rods together.
Made one that worked from old Edison zinc.
Temp. 11 a.m. 23.8°

Fine marks 9:40 after 6 p.m.
On 10.31.40 Temp. 23.0° (Outside -4°)
Ground clock at 10.17 a.m. 15 sec fast 9:12
2.30 p.m. 22° 10.25 p.m. 23.9°

14 Feb. Off 10.16 a.m. No shocks
O.K.
On 10.19 Temp. 19.7° (Outside -11.5°)
9.30 a.m. 29°

15 Feb. Off 10-23 a.m. O.K. No shocks
On 10.24 a.m. Temp. 20.6° (Outside -17°)
1.30 p.m. 21.5° 10.40 p.m. 19.5°

16 Feb. Off 10.20 a.m. No shocks
O.K. except that minute marks were lacking
from 8.02 to 8.59 a.m. incl.
On 10.19.50 a.m. Temp 16.4° (Outside -17°)
Mr. Macmillan gives me the rate of the Bond
Chronometer as being + 2 seconds per day.
Temp. 11 a.m. 16.2° 10.40 p.m. 16.2°

17 Feb. Off 10.02 a.m. No shocks
O.K. except no time mark 11.02-11.59 a.m. +9.02-9.59 a.m.
On 10.03.10 a.m. Temp. 19° (Outside -11°)
17 II (Con) Temp

Bond chronometer reported to be running 4 min fast of local mean time at 9 a.m. (A.M.)
1:45 h. 26.2° 10-45 h. 26.5°

18 Feb. Off 10-32-10 No shocks
O.K., except no time marks 7:02-7:59 a.m. 4:02-4:59 a.m.
and 6:00-6:59 a.m.
On 10:33-15 Temp. 25° (Outside -11°)
Ground clock 9:33 a.m. 18 sec. fast, G.C. 9:53 a.m.
6:10 h. 21.4° 9:45 h. 20°

19 Feb. Off 10-29 No shocks
O.K., except no time marks 7:02-7:59 a.m. 4:02-4:59 a.m.
and 6:00-6:59 a.m.
On 10:30-05 Temp. 19° (Outside -8°)
10:45 h. 22.1°

20 Feb. Off 10-16 No shocks
Minute marks missing at intervals, especially
between 12+1 and 3+6 p.m. 6:9 a.m.
On 10:17-15 Temp. 21.5° (Outside -6°)

Renewed battery solutions 24 hours table-

11-17 - 24° 2:15 h 20.5° 1040 h. 23°

21 Feb. Off 10-18 No shocks
O.K. except minute marks missing 10:46-10:57 a.m.
while batteries were being renewed.
On 10:18-50 Temp. 22-11° (Outside +1.2°)
2:15 h. 22.2°
22 Feb. Off 10:35 a.m.  No shocks  O.K.

On 10:35-55 a.m.  Temp 23.5° (Outside +3°)
Ca. 11:30 a.m.  10:45 F.  33.6

23 Feb. Off 10:30 a.m.  No shocks  O.K. except the piano began running at 9:53 a.m.
On 10:31 a.m.  Temp 25° (Outside +4.5°)
Round clock at 9:28 a.m.  21 sec fast.  R.C. count
5:43 25° 10:20 F.  3°

24 Feb. Off 10:27 a.m.  No shocks  O.K.

Tested pendulum 10:50-45 - 10:51 a.m. yesterday. Vibrated all night.
On 10:27.50 a.m.  Temp 27.5° (Outside -4°)
2h. 29°F 10:15 F.  31°

25 Feb. Off 10:03 a.m.  No shocks  O.K.
On 10:03.50 a.m.  Temp 27.5° (Outside -4°)
2h. 27°F 10:20 F.  25°F  

26 Feb. Off 10:35 a.m.  No shocks  O.K.
On 10:35.50 a.m.  Temp 21° (Outside -12.5°)
5:20 19.5°F snowing. Ice built again +46°-25°F 22.5°
10:30 F.  21°
27 February 1917, Off 10.22 a.m. No shocks
OK except time marks 7:02-7:54 a.m. missing
On 10.22.55
Temp 13.1° (Outside -22)
2:40 p.m. 16°, 6:16° (Penned -25°)

28 February. Off 10.49 a.m. No shocks
OK, except marks for 9:05-9:15 a.m. missing
On 10.49.55
Temp 8° (Outside -18°)
Round clock 9:40 a.m. 27 are lost. Recent
5:00 10:15 p.m. -1°

March, 1917

1. March, Off 9:59 a.m. No shocks
Minute marks missing after 3:01 a.m
On 9:59-10:55 a.m. Temp 0.7° (Outside -21°)
4:00 12° 11:10 0.4°

2. March Off 10.30 a.m. No shocks
Time marks missing 10:02, 10:03 a.m.
4:02 5:02+03, 6:02-a:54 a.m. 1:02 -125°
and 3:02 at 2:00 a.m.
On 10:31:10 a.m. Temp -2° (Outside -18°)
Added two tablespoonsfuls M+Cl to each
jar and started marking against it.
1:18
2:30 6.38 2.5° Mord Florence
Stove out there again. 10:45 9°.
3 March 1917, Off 11.05.5, No shocks.

Time marks o.k. 11.09 a.m. to 7.01 a.m., incl.

But then minute marks missing onward.

Off 11.01.55 Temp. 17.8° (Outside -21°)

3.50 h. 14.5° 10.05 h. 14.2°

4 March Off 10.27 a.m. No shocks.

Minute missing 11.02 to 11.59 a.m., 7.02 to 7.54 a.m.
Papers began running at 6.11 a.m.

On 10.15.55 a.m. Temp. 12.1° (Outside -19°)

130 h. 26.5° 6h. 20.5°

5 March Off 10.44.10 No shocks.

Minute missing, some between 12 to 1 p.m.
Also 11.03 to 1.00 p.m., 6.02 to 6.59 p.m., 7.02 to 7.57 a.m.
Papers began running at 6.29 a.m.

On 10.45.02 Temp. 14° (Outside -14°)

2½ h. 24.5° 11:30 a.m. 27.5° Round clock.

6 March Off 11.07. No shocks.

OK.

On 11.08 Temp. 23° (Outside -18°)

4½ h. 11.40 p.m. 3.6°

7 March Off 10.42. No shocks.

OK with minute marks missing.

On 10.47.45 Temp. 45° (Outside -12°)

11.25 p.m. 4°
8 March Off 10:37

Paper running main twice, coming in the line. Time marks OK.

On 10:37:50

Temp. 3°C (Outside -7°C)

Siked store 18°C at 11:30 a.m. 1:50 - 22°C. 10:45 h 19.1°

9 March Off 10:57 - 10a

No shocks

Time marks missing 1:02 - 1:91 m. 2:02 h - 2:41 a.

Paper began running up at 9:48 a.m.

On 10:54 a. Temp 18.6°C (Outside -7°)

6:40 h 29°C 11:10 h 22.1°

10 March Off 10:54 a

No shocks

Time marks ok, except where interrupted by stoppage. Fed clock through actions a little. Estimates beg in evening.

Paper began running up about 6 a.m.

Set clock with Bunsen chronometer at 9:47 a.m. Wound clock

On 10:55 - 10

Temp 27°C (Outside 5.5°)

1:35 h 26.2° 11:15 h 31°

11 March Off 10:27 a

No shocks

O. K.

On 10:27:55 a

Temp 29.1°C (Outside -2.2°C)

1:30 h m 31.5°
12 March. Off 10.09 a.m. OK except that paper began running up at 7.28 a.m.

Heavy shock of some kind recorded by N. component coming from N. and beginning at 2:47 p.m. 11th min. (correction being made for the hour mark coming at 3 min. past the actual hour, due to error made when clock was set on 10 March) and continuing till 2:52.30 p.m. Some doubt regarding the record as raised in my mind by the apparent continuity of the regular needle trace through the page of charts. This will be settled when I submit the record, which I have collodionized, to Mr. Fiodoff. Preliminary and subsequent records are missing from the record, seeming to show a lack of sensitivity in the apparatus, if this was a true earthquake shock. The record would indicate the occurrence of a heavy quake somewhere in the region from Japan to Sumatra, or a lighter quake further north.

Maddison tells me that by his observation, the Bond chronometer was 10 min 41.3 sec fast on 28th and gaining 2 seconds per day.
This indicates that it was 11 min.
3.3 seconds fast yesterday (11 min.)
Today by Captain Corvis corrected the
clock 2 seconds slow, showing
that loss in two days, 1 sec slow yester-
day. Correct time 1 beginning
of record 2.37 p.m., within 5 sec-
other way, and 2.42.50
new paper on at 10.10.03 a. - Experi-
ed with pendulum obscuring re-
cord. No shocks arrived hence.
Prepared another paper and put it in
at 12.06 p.m. (corrected for hem mark)
Temp. 10.10 a. 28.20 (outside -12)
7.40 p.m. 30° 11 f.m. 28°

13 March, Off. 10.39(41) a.m. No shocks
0½ except that paper began to run upon
rain at ca 4.39 a.m.
Cleaned drums, mounting flax + batteries.
On. 10.42(45) a
Temp. 26.5° (outside) 12°
7 f.m. 25° 9.50 f.5 (wind light down)

14 March Off. 10.32(35) a.m. No shocks
0.1
On. 10.33 (36) a.m. Temp. 16° (outside -17°)
11 a. 26° 11 f.m. 20.5°
15 March, 1917. Off 11.01 a.m. No shocks.

O.K.
On 11.02.40 a.m. Clock better 4.5 + 5 see slow. Q.C. counted.
Stopped from 9.40 to 10.48 for purpose of adjusting hand mark and setting. Hand mark incorrect, and set clock again at 12.18 p.m.
6.29 p.m. 14.50
Tri'd again at 7.02.

16 March. Off 10.37 a.m. No shocks.
O.K. except minute missing from 9.01 a.m. onward. - Parkin Telegraph, N.H.C. say temp. 16° (outside 23°).
On 10.37 a.m. 15° 6.24 p.m. 13.6° 10.30 p.m. 14°

17 March. Off 11.01 a.m. No shocks.
Time marks missing from 11.02 a.m. - 12.51.
Ca 1 a.m. - 2.26 a.m. and at other short intervals.
On 11.02 a.m. Temp. 11.9° (outside -22°)
11 p.m. 23° adjusted batteries.
6.35 p.m. 21.3° 11 p.m. 20°

18 March. Off 10.09 a.m. No shocks.
Time marks O.K. after 12.50 p.m. when batteries were fixed.
On 10.09 a.m. Temp. 17.3° (outside -19°)
6.30 p.m. 27.2° 11 p.m.-
19 March, 1919. Off 10.26 a.m.  No shock.

O.K.

On 10.27 a.m.  Temp. 30.5° (outside 10°)

Returned 8.13 M's thermometer to him.

20 March. Off 10.41 a.m.  No shock.

O.K. except that a few minute mains are missing occasionally.

On 10.42 a.m.

Wound clock 10.06 a.m.  Free slow.

Of bond chronometer, by G.C. comit.

21 March off 10.49.30 a.m.  No shock.

Times interrupted. Looking from 10.2 to about 9 a.m.

On 10.51.15 a.m.
George Comer, Observer

March 22 off at 9.38 a.m. check
OK
on 9.40. 15

March 23 off 10.55 20 m check
OK
on 10.10. 30

— 24 off at 10.09 m check
OK
on 10.11. 40

Clock show of Chas. 6° 45'
as clock was stopped for repairing
No check. Not working well after

— 25° on. cut 9-23.

No check. Battery not working
Mark in neither minute or hour
off at 10.47 am the 29.
On the board of the chronometer
is unknown. Some these figures
are on an approximation the 26 and
Battery by water part of pendulum
DIAXMET # Clocks working but no
record of check.

March 27 took down clock and worked
on wires and batteries got all
replaced at 1230
and now working well.
The seismograph went all right till 7 am. Then noticed to mark off the minutes at 8:30 I turned the long set screw and the minutes were again registered, but I found I had not replaced the hands back on properly and the Hour mark does not register till 5 minutes after the hour and the Hand of the seismograph not being correct does not make up of the minutes on the exact amount of the clock but must be corrected later. No shock off at 10:18. On at 10:20.

I have no knowledge of how correct the Capekid time the chronometer is said to be about 10 minutes fast.
March 24. Paper on an at
10.20 off at 9.2 marked
the Batter in lack. The summit
mark in good shake last
the hour mark did not
show after good same
5 am till started off
New paper placed on
at 9.45 2 am
no record. Working well
on at 9.54 March 29
off at 9.55 March 30
no record. Summits not
being marked. After 2 am
for some reason the
minute marks cease
late each morning may
for several mornings

March 31 on at 9 am
not marking the minute
all noon after turning
one of the long axes on left
hand side
off at 9.50 April 1
no shock no marking
the minute towards morning
April 1, 19__

on at 10 a.m. April 1st
off at 9.52 a.m. April 2nd

Morning very well but mummmt
marks not quite true
on at 9.36 a.m. April 2nd
off at 9.07 a.m. no shock
Mummmt marks fully
by morning also hein
Marked after 5 a.m.

April 3 on at 9.11 a.m.
off at 9.08 a.m. no shock
no mummmt mark

April 4 on at 9 a.m.
off at 9.06 a.m. no shock
no mummmt mark
but have mark good

April 5 on at 9.07 a.m.
off at 9.02 a.m. April 6th
no shock
have mark no mummmt

April 7 on at 9.14 a.m. no shock
off at 9.14.30 a.m.
off at 8.37 a.m. no shock

April 8th on at 9 a.m.
off at 10.12 a.m. no shock
April 10
off at 8.52 no shock
on at 8.54 no shock
closed clocked noted by nurse
April 11
on at 9.10.30
off at 10.14 no shock

April 12
on at 10.16
off at 8.1 a.m.
working well no shock
April 13
on at 8.02 50 a.m.
off at 9.03
no shock

Meeting clock
April 14
on at 9.05 a.m.
off at 9.30
no shock

Minute mark becoming faint
April 15
on at 9.32 a.m.
no shock
off at 8.57 a.m.
April 16
off at 8.57 a.m.
no shock not marking minute

April 17
on at 7.42 p.m.
April 18
off at 9.10 a.m.
no shock
on at 9.12 a.m.
April 19
on at 7.52 a.m.
no shock marks moving towards morning thin began again
intermittent in marking
towards morning
off at 7.53 a.m.
Totals

May 6  Record on at 7.35

after running 14 hours one hour down
May 7
working well
May 8

right Pointin' (boiling at) again
became erratic last half high
other wire working well
May 9
working well
May 10
working well
May 11
working well
May 12
working well
May 13
working well
May 14, 1917

On at 7:49
Off at 8:14

No shock

Washed all but washed off the drum a little, the came so that the leaves rallied cleaned out.

May 15

On at 8:16

On account of the ice melted melting and dripping on the thermograph it is not running well. The ice burned had formed or started off.

Have removed the tent and torn taken off all the head clamps of the sail. Torn, later

Flooded it best to put sheets of the at 10:17

Furthest draping have put on 3 halves to dry. The last at 10:17

And now have fixed the kerosine stove back on to dry off the instrument.
May 17

On early heat not working till 9:20 am

Not working 9:30 am I finished but a dish of oil for the bals which holds up the small shanger to the two small evils they are working it back and forth with the point of a knife it set going all right

Off at 7:32 am

Working since all right

May 18
On at 7:34 am
Nine shock

May 19
On at 7:44 am
Off at 7:29
No shock

May 20
On at 7:36 am
Off at 7:46 am
One shock

May 21
On at 7:47 am
Off at 7:38 am
No shock

Working well
May 22  on at 7.35 am
    off at 7.29 am
    no shock
    Finished packing at about 9 am
    the little puncher next to the
    Two schools not working early
    started it. Back and forth and
    set it going all night

May 23  on at 7.31 am
    off at 7.32 am
    working well
    no shock

May 24  on at 7.30 am
        no packing
        have failed to make down
        a day

May 25  on at 7.31
        off at 7.20
        no shock
        working well

May 26  on at 7.22
        off at 7.28
        no shock
        working well

May 27  on at 7.39
        off at 7.34
May 28

Working well

May 29

Working well

May 30

Stopped working

No shock

The drum

May 31

Had run off during the night

The place where the leucomograph is placed is new so next that there is an excess of water on the3

And the showing may throw the instrument out of plumb
June 1
half a recueil as the drum stopped revolving

June 2
off at 7.32 am
one half of a recueil
alright but after half
had recrossed
no shock
on at 7.34 am

June 3
off at 7.35 am
on at 7.37 am
working well no shock

June 4
off at 7.28 am
on at 7.30 am
working well no shock

June 5
off at 7.31 am
on at 7.35 am
working well no shock

June 6
off at 7.30 am
on at 7.32 am
working well no shock

June 7
off at 7.39 am
on at 7.35 am
working well no shock
June 5  off at 2:32
working well no shock

June 9  off at 2:33
and at 2:35
working well no shock
getting perfect check but
no shocker as rather
discouraging

June 10  off at 7:29
and at 7:31
working well no shock

June 11  off at 7:35
and at 7:37
working well no shock

June 12  off at 7:31
and at 7:32
working well no shock

June 13  off at 7:31
and on at 7:33
no shock

During the geomagnetograph the
left hand marker failed to
keep true and retrieved
during the right right marker
OK
June 14 off at 7:35
on at 7:40
working well no shock

June 15 off at 7:30
on at 7:52
working well no shock

June 16 off at 7:36
on at 7:38
no shock

The right hand printer (facing the machine) failed to mark the numbers, but marked the moments correctly.

June 17 off at 7:39 am
on at 7:49 am
not working well no shock

The left hand while at marks the moments correctly, does not mark the numbers distinctly, though they can be seen. The left hand seems and marks well but

improves.
June 18, 1917

the right hand no check
feebly and mark the hours
distinctly the left hand
working correctly

June 19

off at 7:34
on at 9:39
no check
left hand working alright
but right hand dark and
strike out to the right but
only makes a dot

June 20

off at 7:34
on at 9:40
no check
the right hand no check
still faint and mark
the hours but neither
clear and not side-wise

June 21

off at 9:15
on at 7:25
no check
the right hand still faint
at dewing and side-wise
and mark the hours distinctly
June 22, 1917

off at 7:30

on at 7:41

no shock

there is a little improvement in the marking of the letters by the right hand marker.

June 23

off at 7:36

on at 7:41

no shock

the right hand into working best

not so good as the left one

(forging it)

the left one goes like this

while the right one goes...

June 24

off at 7:26 am

on at 7:28 am

no shock

working well but the right hand is not quite so energetic as the left one

though quite readable
June 25

working very well no shock

time off: 7:33 a.m.
time on: 7:35 a.m.

June 26

working well no shock

time off: 7:23 a.m.
time on: 7:26 a.m.

June 27

working well looking sick

time off: 7:52 a.m.
time on: 7:54 a.m.

June 28

working well no shock

time off: 7:53 a.m.
time on: 7:55 a.m.

June 29

working well no shock

the right hand does not make such perfect lines as
the left one

June 30

working well no shock

both hands working

perfect
July 1
off at 5:46 am
on at 8:59 am
working well no shock

July 2
off at 8:15
on at 8:27
found the lower roller in
its groove at having worked
off this morning no shock
right hand in need
not working easily

July 3
off at 8:23 am
on at 8:34
no shock
the left hand working perfect
but right one not as well
I can see that it is
because I have not always
known just what to do
and adjust it

July 4
off at 7:25 am
on at 7:27 am
no shock
working well both hands
July 5, 1917

On July 5, 1917, I left at 7:30 am and arrived at 7:32 am, no shock in adjusting the instrument. The Meritner Pointer not only swung out but now declined and crossed over the line a little other wire covert.

This is the endment off the coast looking for material around old trunks.

July 10, 1917

In taking climate and höch with the frame work of the electrometer I have broken one of the hooks which the lower roller rests against there are 6 hooks of the material.
It should be stated that when the seismograph was tested alone I found that theMercer on which the flames rested were in soft mud and this no doubt has been the main cause the ground threw some time ago.
Marvin, C. F. - Universal Seismograph for Horizontal Motion, etc.