WIND AND MOUNTAIN CLIMATOLOGY IN SEVERE ENVIRONMENTS:

DAILY TEMPERATURE AND HUMIDITY REGIMES FOR LOWER HIDDEN VALLEY (TR 6), ROCKY MOUNTAIN NATIONAL PARK FEB-MAY 1974

D. E. GLIDDEN

UPDATED SEPTEMBER 2018

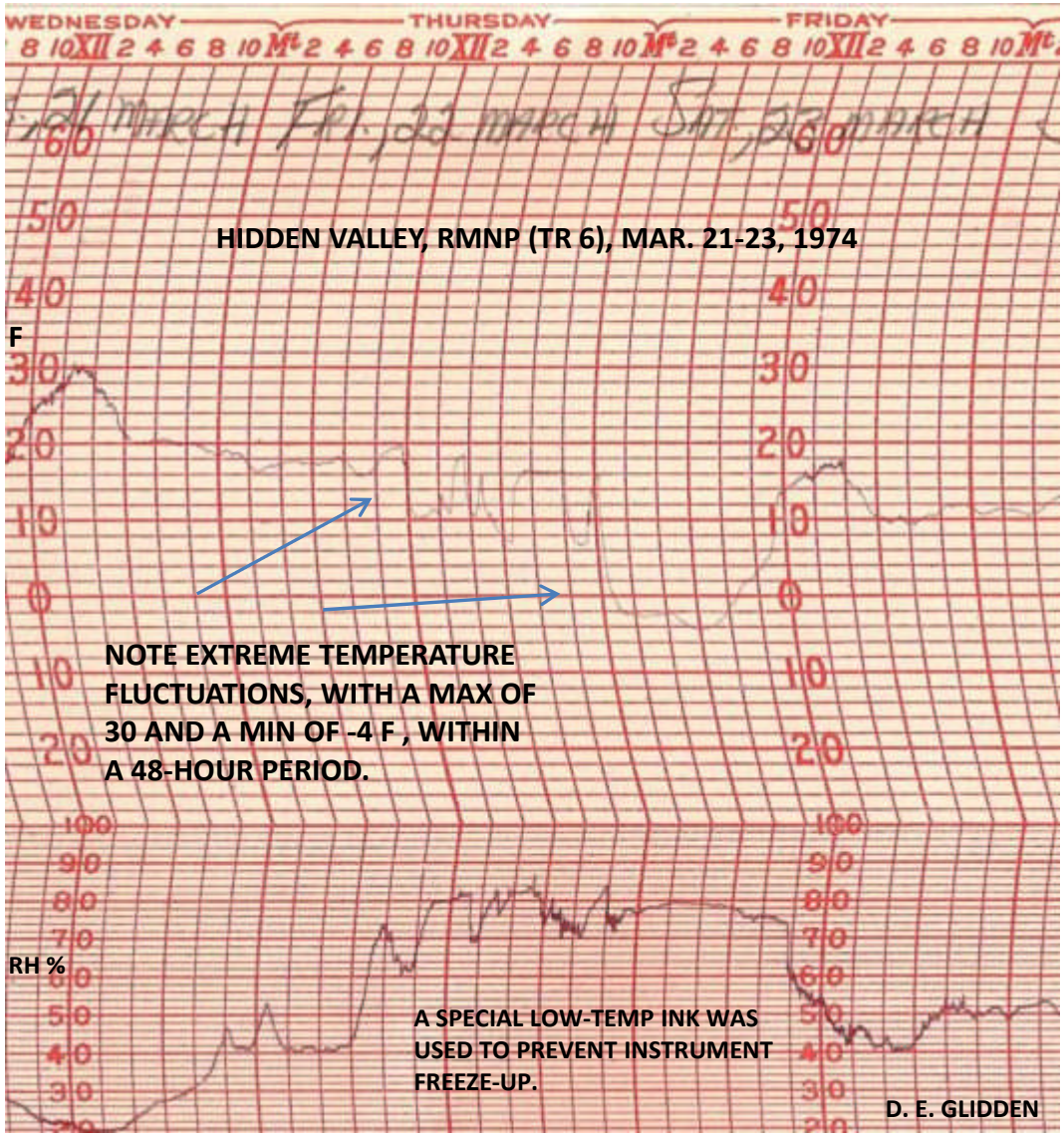
GINA MEYERS PROVIDING SLOPE WIND DIRECTION DATA, WHICH RESULTED IN A BETTER UNDERSTANDING OF HOW ALPINE WIND DIRECTION INFLUENCED SUBALPINE FLOW. SUBALPINE SURFACE WIND DIRECTION IS OFTEN DIFFERENT FROM THE PREVAILING OR ALPINE DIRECTION (NOTE FLAGGED TREES NOT FAR FROM ROCK CABIN).

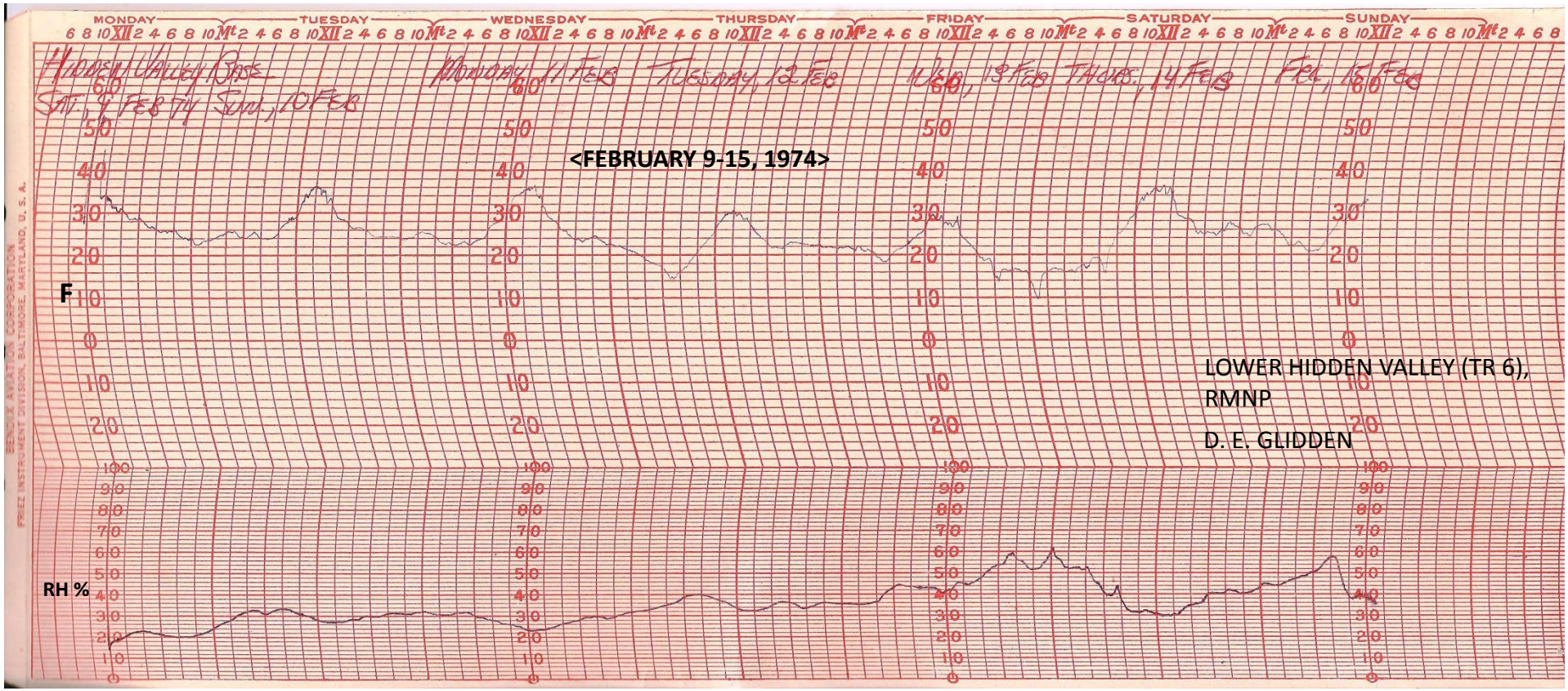
INTRODUCTION

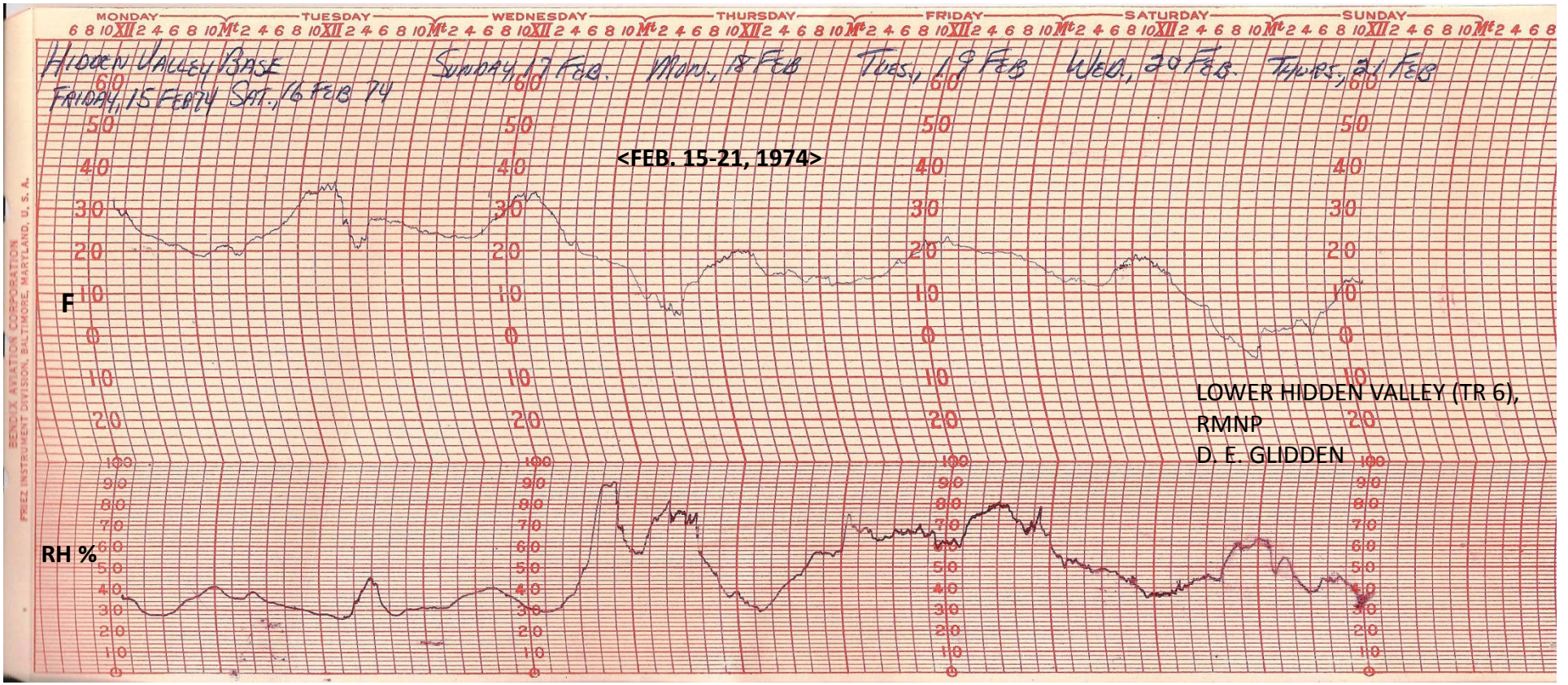
DURING 1973-74 EXTENSIVE WIND RESEARCH WAS CONDUCTED IN ROCKY MOUNTAIN NATIONAL PARK, COLORADO, AND PARTICULARLY CENTERED NEAR HIDDEN VALLEY (2913 M) AND TRAIL RIDGE ROAD (3600 M). SUPPLEMENTAL METEOROLOGICAL DATA WAS ALSO COLLECTED, INCLUDING DAILY TEMPERATURE, HUMIDITY, AND PRESSURE REGIMES. SOME REMARKABLE TEMPERATURE AND RH FLUCTUATIONS ARE CHARACTERISTIC OF THIS SITE, OFTEN JUST BELOW THE CLOUD BASE IN GUSTY WINDS. (SEE MARCH 21-23, 1974)

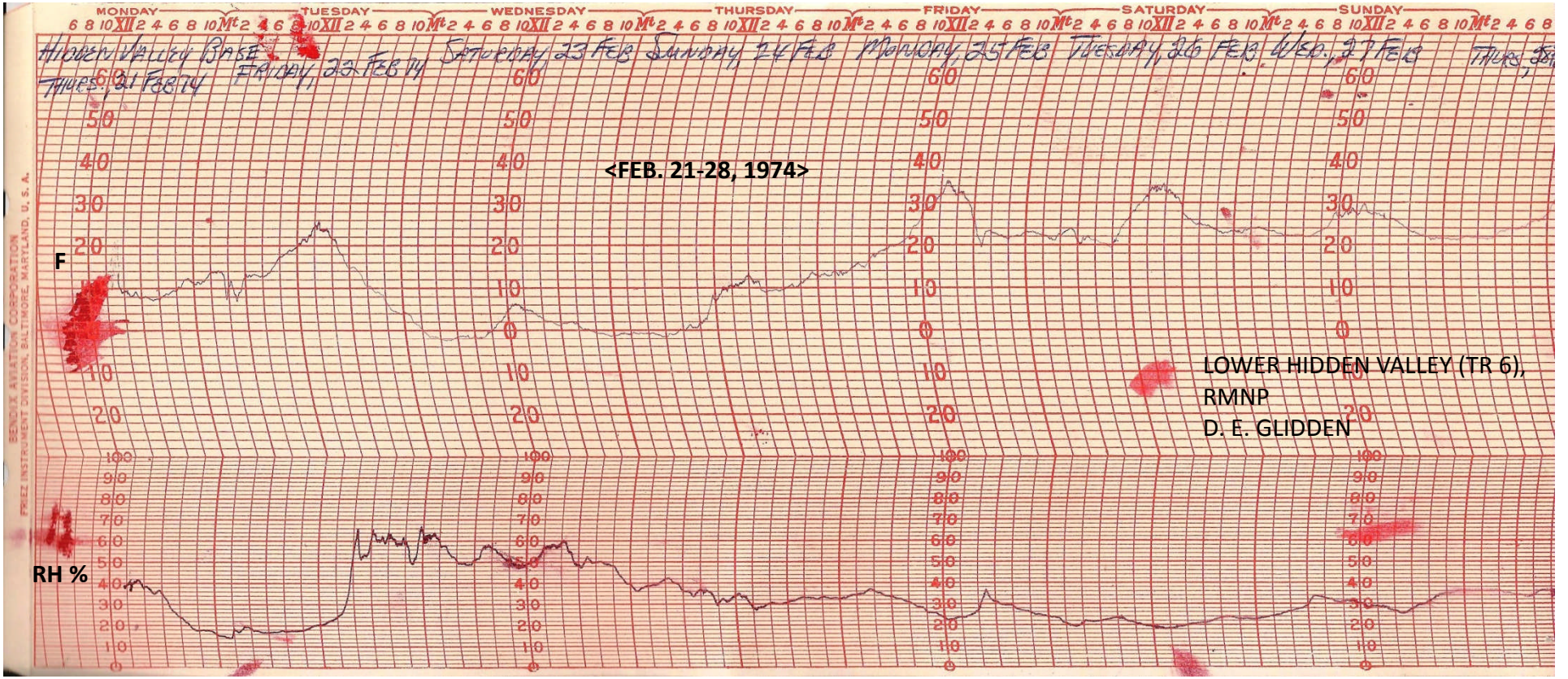
DIGITAL COPIES OF THE ORIGINAL ANALOG SCREEN TEMPERATURE AND HUMIDITY GRAPHS FOR LOWER HIDDEN VALLEY (TR 6) ARE APPENDED BELOW. THEY PROVIDE A UNIQUE SOURCE OF CLIMATOLOGICAL DATA (AND ITS HOURLY VARIABILITY) FOR RMNP, AND MAY BE USEFUL FOR COMPARISON WITH FUTURE STUDIES AND ECOLOGICAL RESEARCH. SEE ALSO: ***DAILY TEMPERATURE AND HUMIDITY REGIMES FOR SUMMER, 1980 AT THE ALPINE VISITORS' CENTER (TR 10), ROCKY MOUNTAIN NATIONAL PARK***

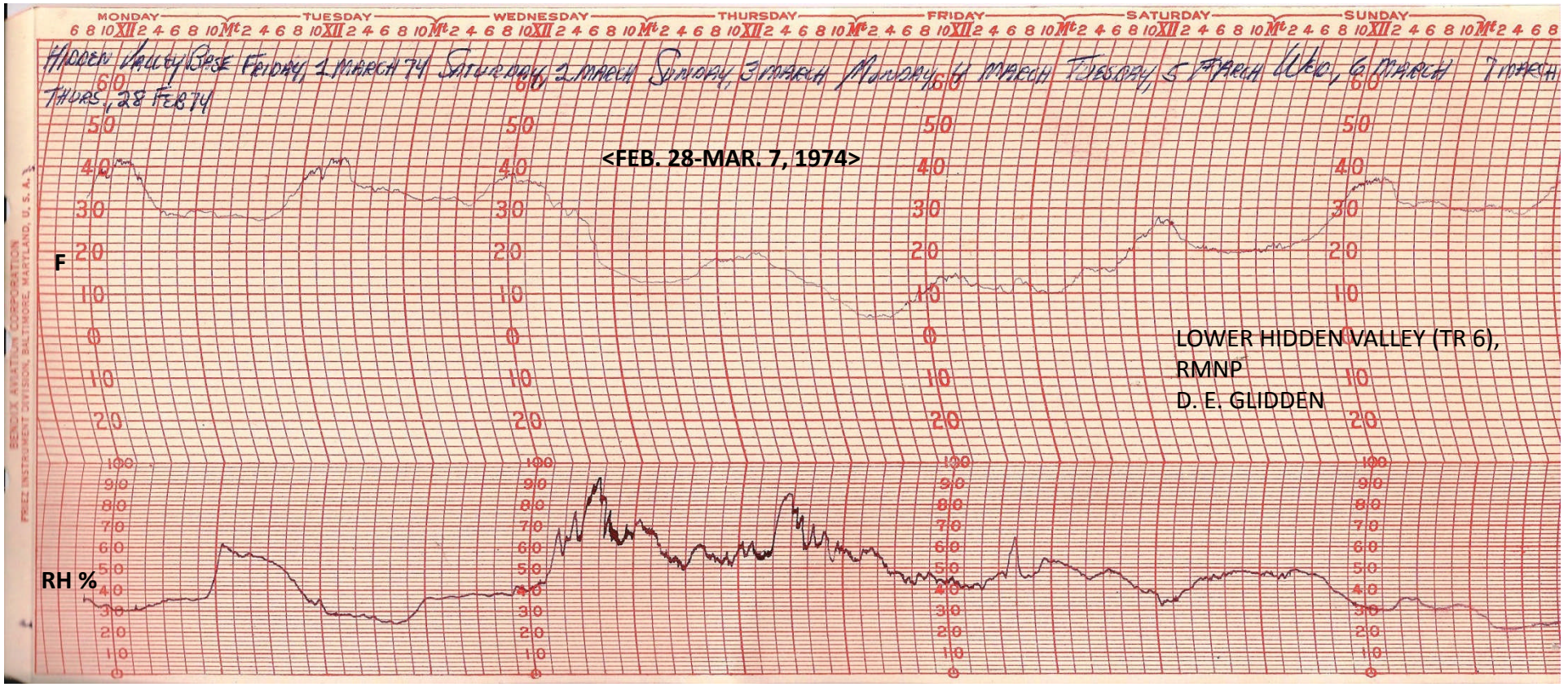
(PAGE DOWN FOR WEEKLY GRAPHS)


WEDNESDAY
THURSDAY
FRIDAY
HIDDEN VALLEY, RMNP (TR 6), MAR. 21-23, 1974
F
NOTE EXTREME TEMPERATURE FLUCTUATIONS, WITH A MAX OF 30 AND A MIN OF -4 F , WITHIN A 48-HOUR PERIOD.
RH %
A SPECIAL LOW-TEMP INK WAS USED TO PREVENT INSTRUMENT FREEZE-UP.
D. E. GLIDDEN

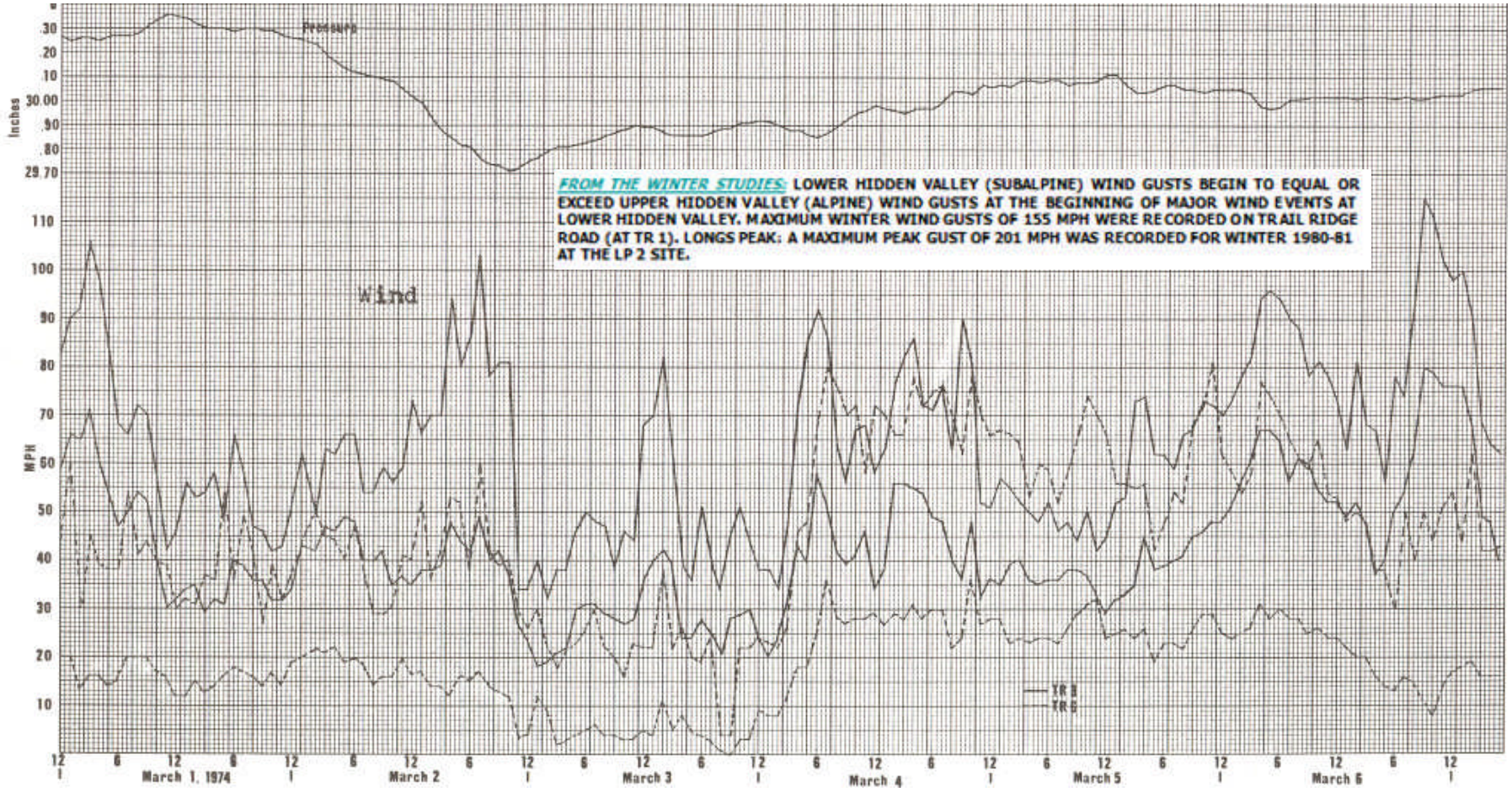

MONDAY
TUESDAY
WEDNESDAY
THURSDAY
FRIDAY
SATURDAY
SUNDAY
Hidden Valley Base
Sat, 9 Feb Thu Sun, 10 Feb
Monday, 11 Feb
Tuesday, 12 Feb
Wed, 13 Feb
Thurs, 14 Feb
Fri, 15 Feb
<FEBRUARY 9-15, 1974>
F
RH %
LOWER HIDDEN VALLEY (TR 6), RMNP
D. E. GLIDDEN


MONDAY
TUESDAY
WEDNESDAY
THURSDAY
FRIDAY
SATURDAY
SUNDAY
Hidden Valley Base
Friday, 15 Feb 74 Sat., 16 Feb 74
Sunday 17 Feb.
Mon., 18 Feb
Tues., 19 Feb
Wed., 20 Feb.
Thurs., 21 Feb
<FEB. 15-21, 1974>
F
RH %
LOWER HIDDEN VALLEY (TR 6),
RMNP
D. E. GLIDDEN
BENDIX AVIATION CORPORATION
FRIEZ INSTRUMENT DIVISION, BALTIMORE, MARYLAND, U. S. A.


MONDAY
TUESDAY
WEDNESDAY
THURSDAY
FRIDAY
SATURDAY
SUNDAY
Hidden Valley Base
Tuesday, 21 Feb 74
Friday, 23 Feb 74
Saturday, 23 Feb
Sunday, 24 Feb
Monday, 25 Feb
Tuesday, 26 Feb
Wed., 27 Feb
Thurs., 28
<FEB. 21-28, 1974>
F
RH %
LOWER HIDDEN VALLEY (TR 6),
RMNP
D. E. GLIDDEN
BENDIX AVIATION CORPORATION
FRIEZ INSTRUMENT DIVISION, BALTIMORE, MARYLAND, U. S. A.


MONDAY
TUESDAY
WEDNESDAY
THURSDAY
FRIDAY
SATURDAY
SUNDAY
Hidden Valley Rest Friday, 1 March 74 Saturday 2 March Sunday, 3 March Monday, 4 March Tuesday, 5 March Wed, 6 March Thurs
Thurs, 28 Feb 74
<FEB. 28-MAR. 7, 1974>
F
RH %
LOWER HIDDEN VALLEY (TR 6),
RMNP
D. E. GLIDDEN

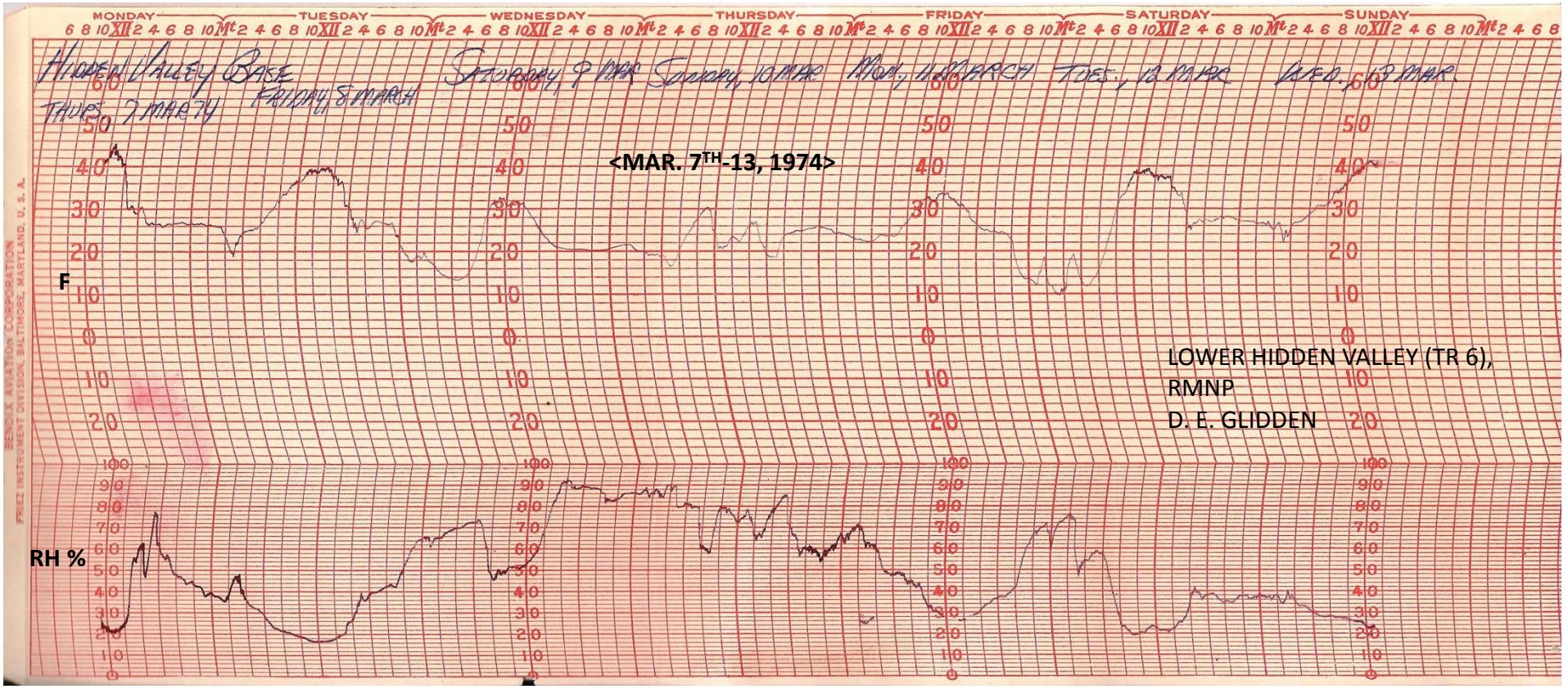
THE COMPLICATED RELATIONSHIP OF SURFACE PRESSURE TRENDS TO WIND MAXIMA AND AVERAGES IN A ROCKY MOUNTAIN ALPINE AND SUBALPINE ENVIRONMENT

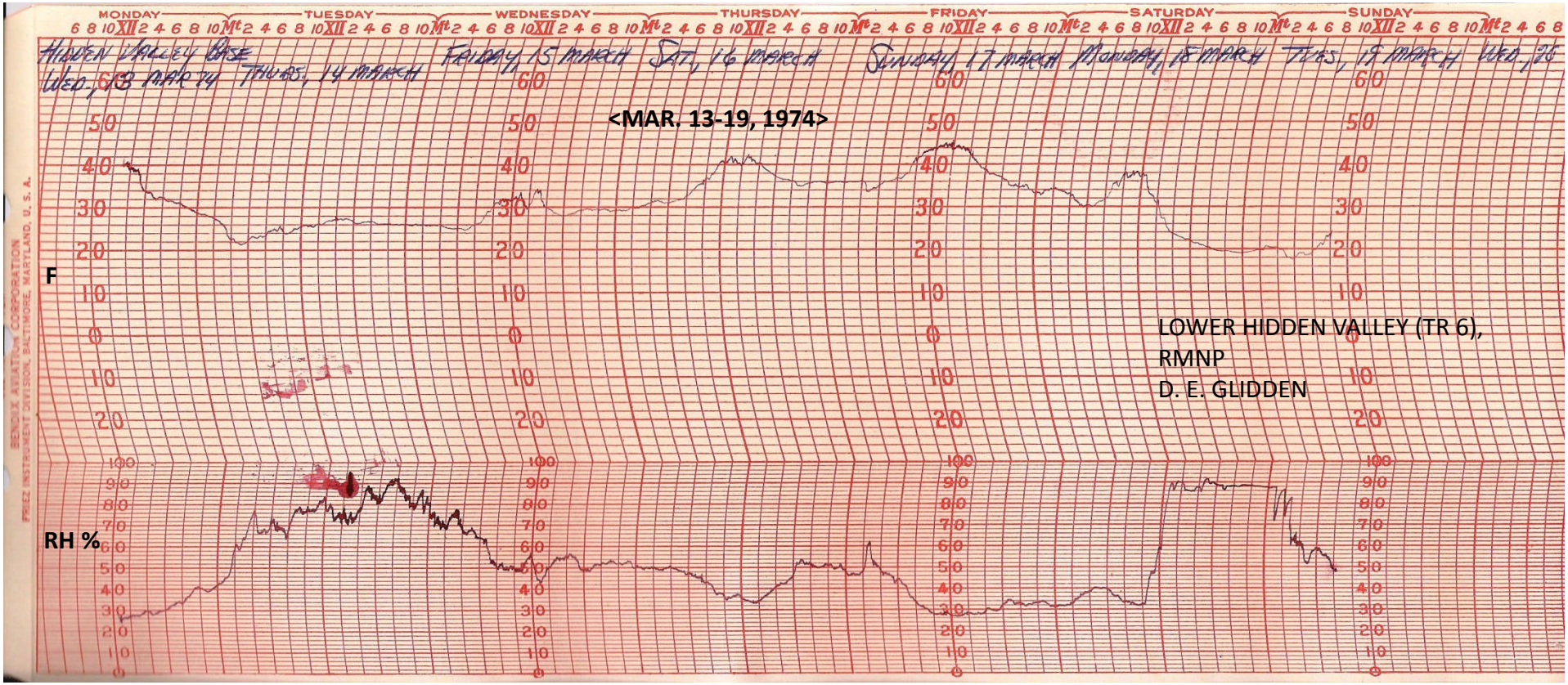


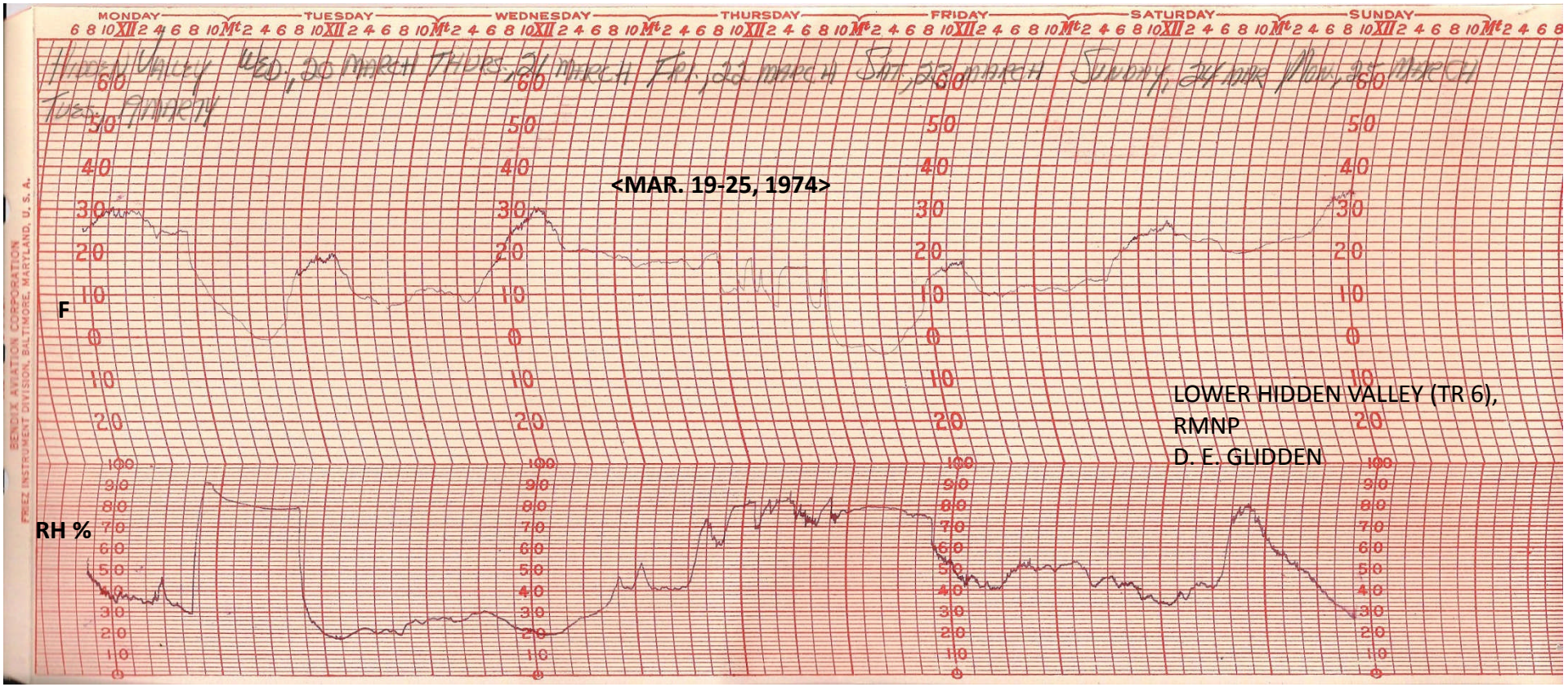
HOURLY PEAK GUSTS AND AVERAGE WIND SPEEDS DURING THE FIRST WEEK OF MARCH 1974 FOR UPPER (TR 3) AND LOWER (TR 6) HIDDEN VALLEY, ROCKY MOUNTAIN NATIONAL PARK. FOR WIND, THE SOLID LINES REPRESENT DATA AT TR 3 AND THE DASHED LINES AT TR 6. NOT ALL WIND MAXIMA WERE ASSOCIATED WITH SIGNIFICANT PRESSURE FALLS OR RISES. ON MARCH 2, NOTE THAT WIND MAXIMA OCCURRED JUST PRIOR TO PRESSURE MINIMA, SIMILAR TO THE MWO FEB. 3-4, 1972 MAXIMA OF 166 MPH. HOWEVER, ON MARCH 6TH THE RMNP WIND MAXIMA OF 115 MPH OCCURRED WITH LITTLE PRESSURE CHANGE.

TR 3 IS AT 3536 METERS; TR 6 IS AT 2913 METERS
PRESSURE RECORDED AT TR 6

AFTER D. E. GLIDDEN,
WINTER WIND STUDIES IN ROCKY MOUNTAIN NATIONAL PARK, 1982


MONDAY
TUESDAY
WEDNESDAY
THURSDAY
FRIDAY
SATURDAY
SUNDAY
Hidden Valley Base
THURS 7 MAR 74
FRIDAY 8 MARCH
Saturday 9 MAR
Sunday, 10 MAR
Mon, 11 MARCH
Tues, 12 MAR
Wed. 13 MAR.
<MAR. 7TH-13, 1974>
F
RH %
LOWER HIDDEN VALLEY (TR 6),
RMNP
D. E. GLIDDEN
BENDIX AVIATION CORPORATION
FRIEZ INSTRUMENT DIVISION, BALTIMORE, MARYLAND, U. S. A.


MONDAY
TUESDAY
WEDNESDAY
THURSDAY
FRIDAY
SATURDAY
SUNDAY
Hidden Valley Base
Wed, 13 March
Thurs, 14 March
Friday 15 March
Sat, 16 March
Sunday 17 March
Monday, 18 March
Tues, 19 March
Wed, 20
<MAR. 13-19, 1974>
F
RH %
LOWER HIDDEN VALLEY (TR 6),
RMNP
D. E. GLIDDEN
BENDIX AVIATION CORPORATION
FRIEZ INSTRUMENT DIVISION, BALTIMORE, MARYLAND, U. S. A.


MONDAY
TUESDAY
WEDNESDAY
THURSDAY
FRIDAY
SATURDAY
SUNDAY
<MAR. 19-25, 1974>
F
RH %
LOWER HIDDEN VALLEY (TR 6),
RMNP
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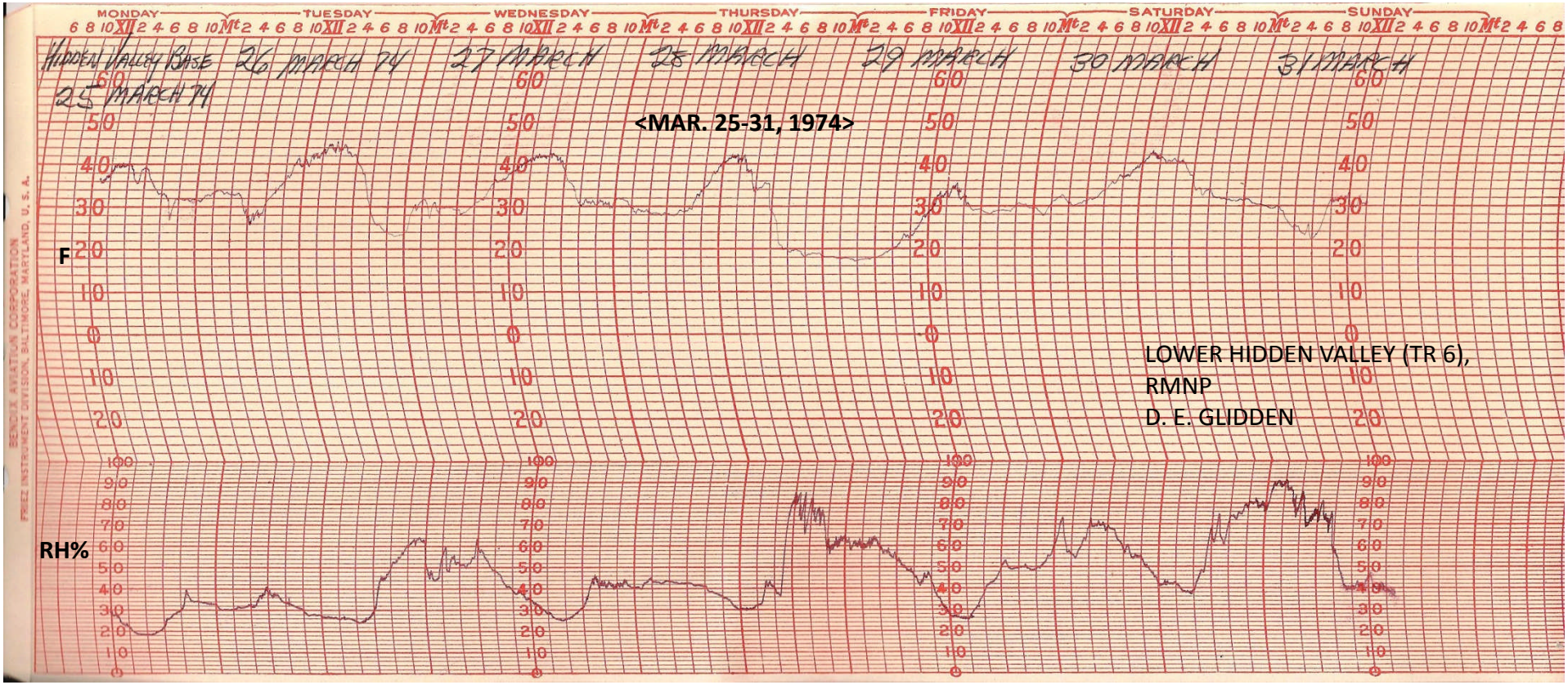
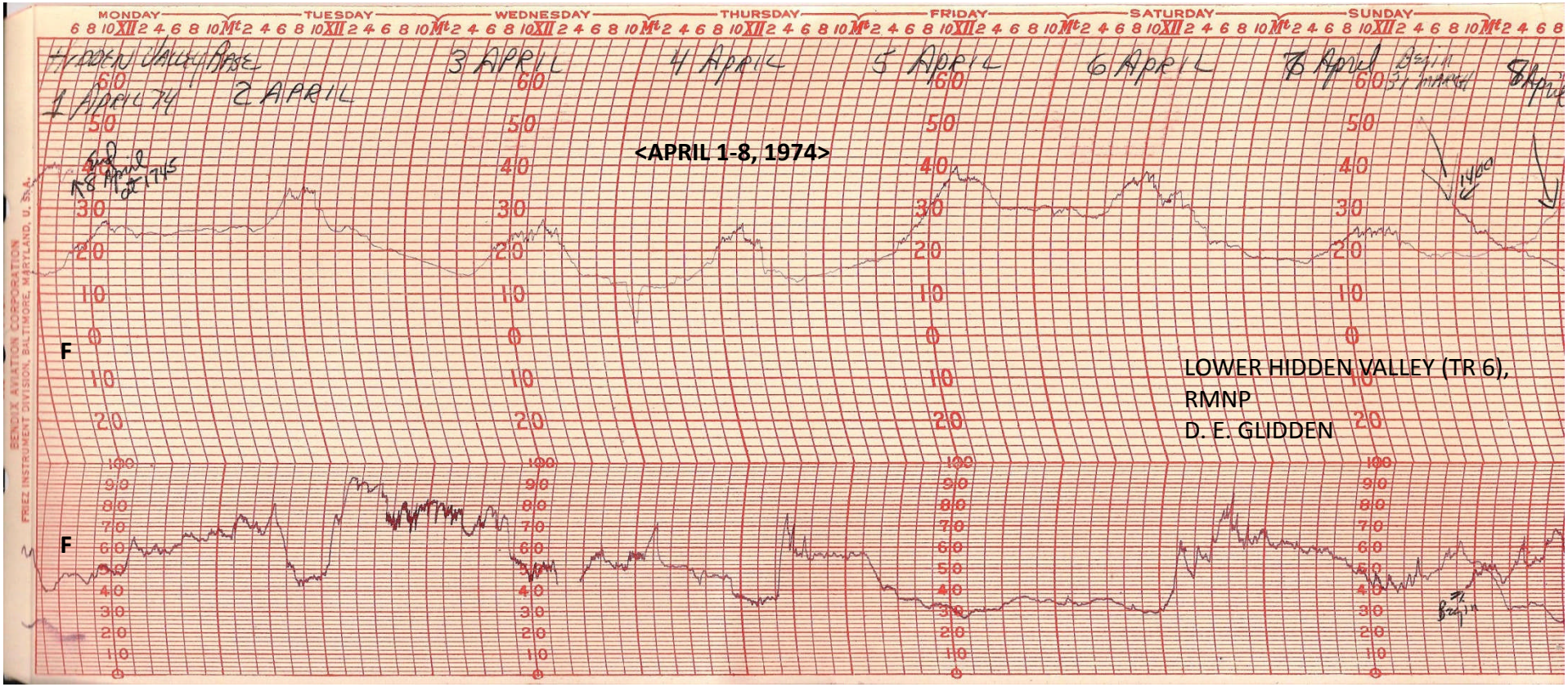
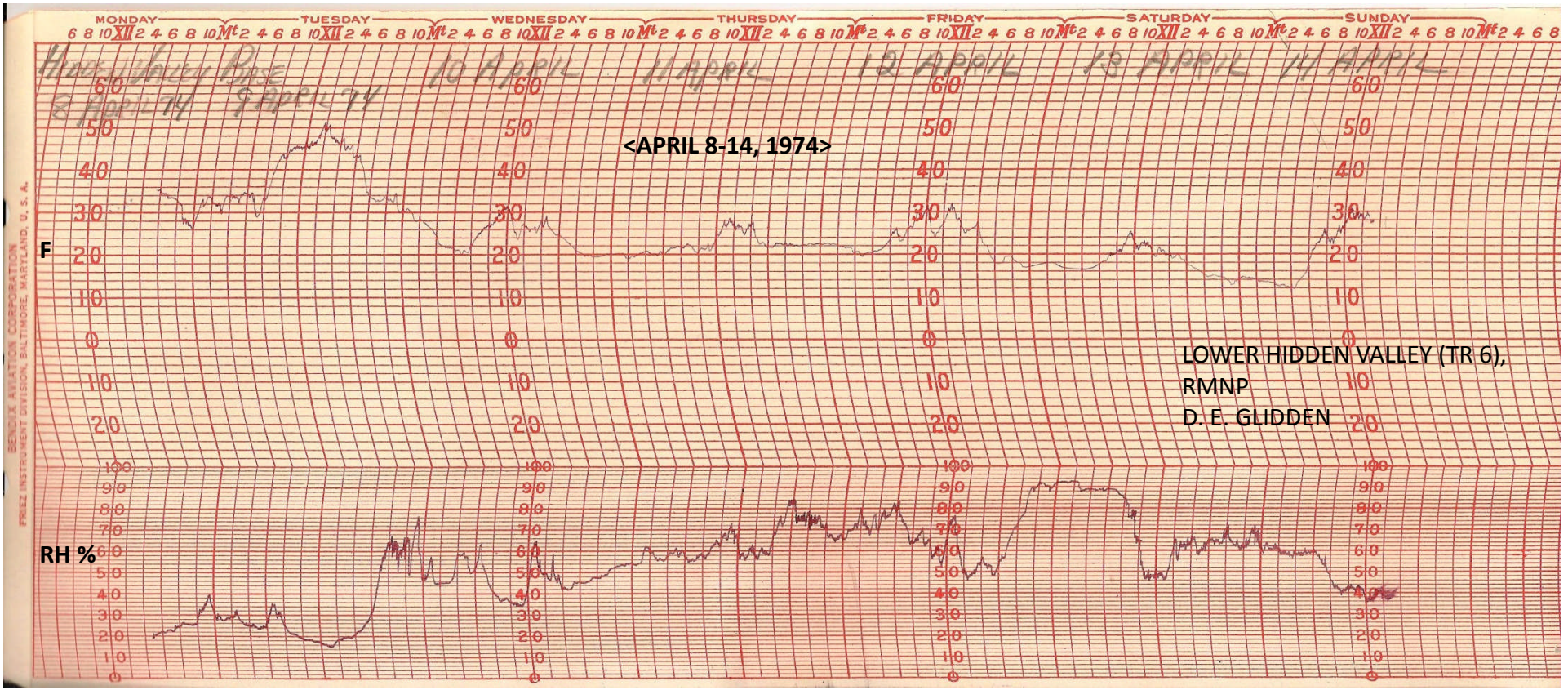
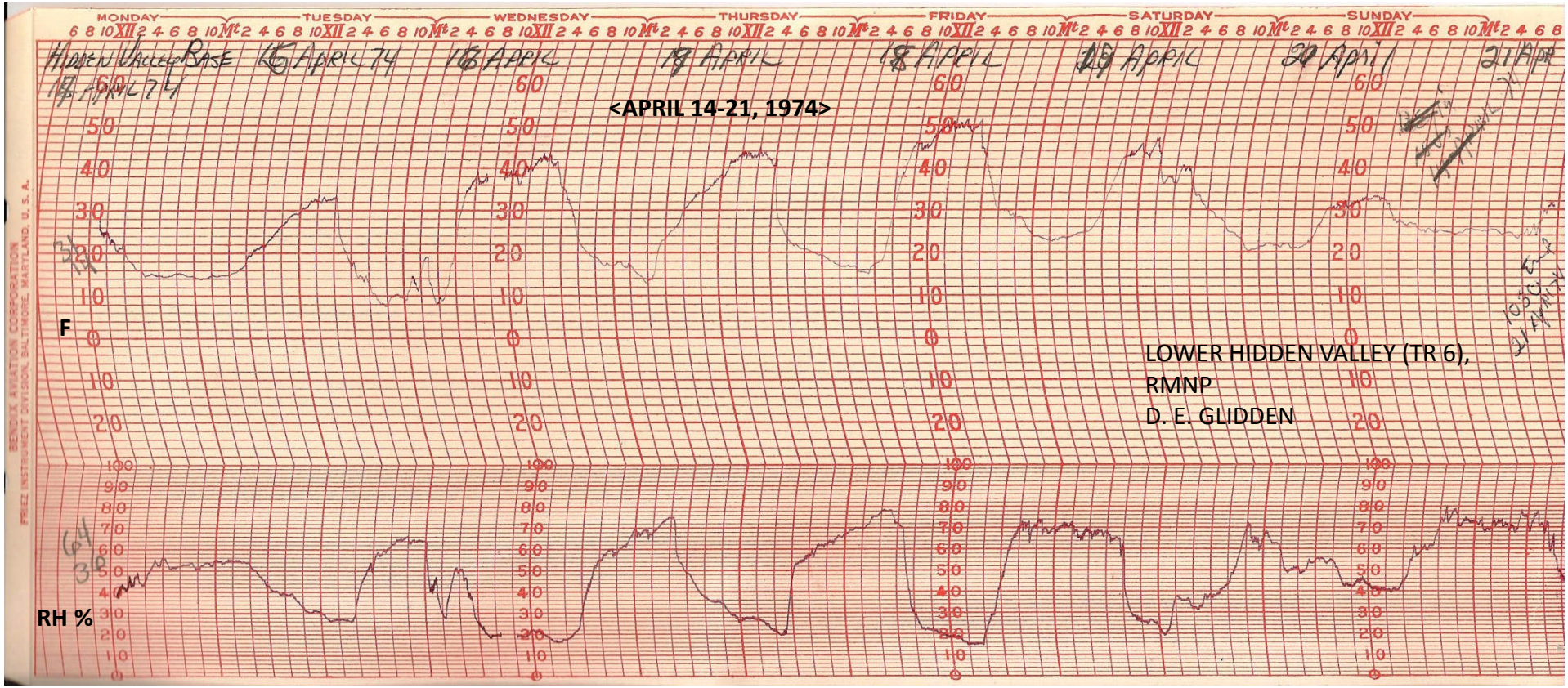
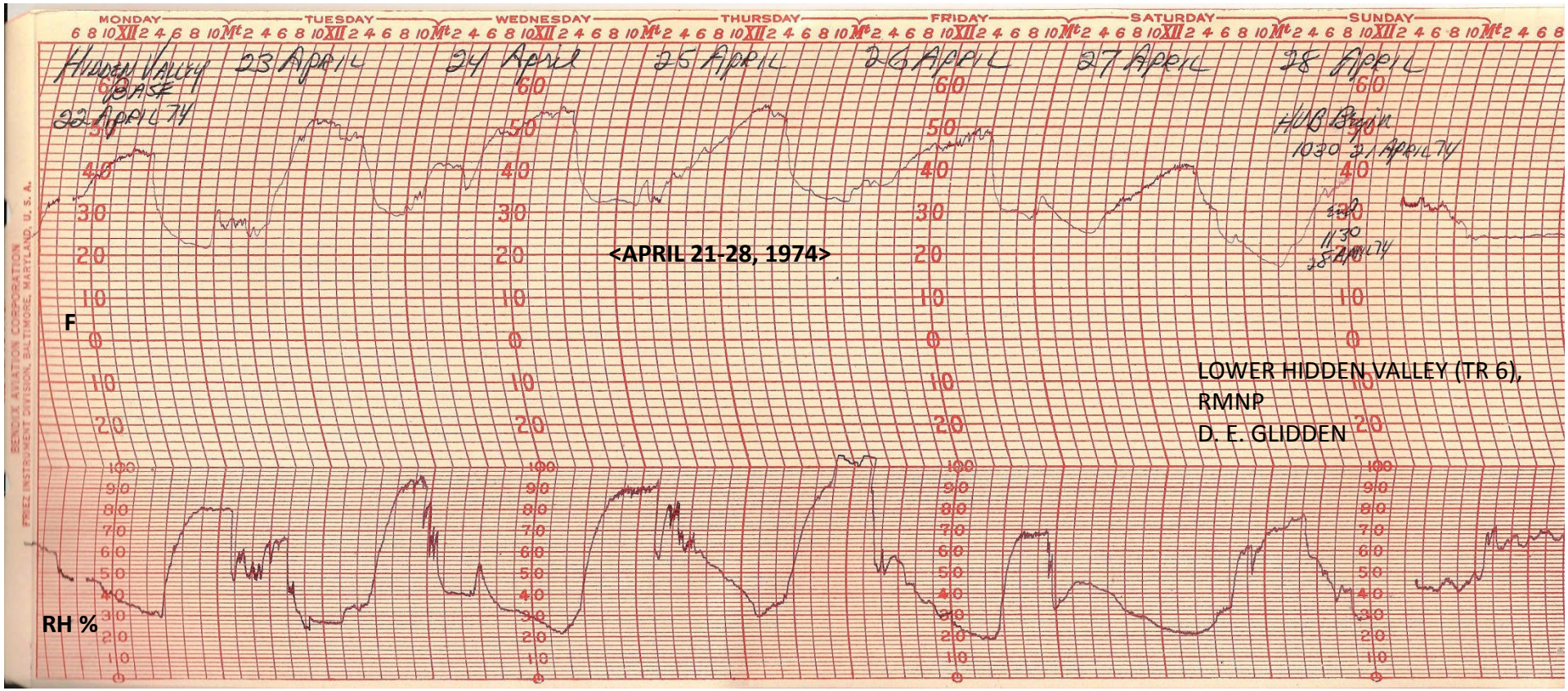
FRIEZ INSTRUMENT DIVISION, BALTIMORE, MARYLAND, U. S. A.


MONDAY
TUESDAY
WEDNESDAY
THURSDAY
FRIDAY
SATURDAY
SUNDAY
Hidden Valley Base 25 March 74
26 March 74
27 March
28 March
29 March
30 March
31 March
<MAR. 25-31, 1974>
F
RH%
LOWER HIDDEN VALLEY (TR 6),
RMNP
D. E. GLIDDEN
BENDIX AVIATION CORPORATION
FRIEZ INSTRUMENT DIVISION, BALTIMORE, MARYLAND, U. S. A.


MONDAY
TUESDAY
WEDNESDAY
THURSDAY
FRIDAY
SATURDAY
SUNDAY
1 APRIL 74
2 APRIL
3 APRIL
4 April
5 April
6 April
7 April
8 April
<APRIL 1-8, 1974>
F
F
LOWER HIDDEN VALLEY (TR 6),
RMNP
D. E. GLIDDEN
BENDIX AVIATION CORPORATION
FRIEZ INSTRUMENT DIVISION, BALTIMORE, MARYLAND, U. S.A.


MONDAY
TUESDAY
WEDNESDAY
THURSDAY
FRIDAY
SATURDAY
SUNDAY
<APRIL 8-14, 1974>
F
RH %
LOWER HIDDEN VALLEY (TR 6),
RMNP
D. E. GLIDDEN
BENDIX AVIATION CORPORATION
FRIEZ INSTRUMENT DIVISION, BALTIMORE, MARYLAND, U. S. A.


MONDAY
TUESDAY
WEDNESDAY
THURSDAY
FRIDAY
SATURDAY
SUNDAY
Hidden Valley Base
15 April 74
16 April
17 April
18 April
19 April
20 April
21 Apr
<APRIL 14-21, 1974>
F
RH %
LOWER HIDDEN VALLEY (TR 6),
RMNP
D. E. GLIDDEN


MONDAY
TUESDAY
WEDNESDAY
THURSDAY
FRIDAY
SATURDAY
SUNDAY
Hidden Valley Base
22 April 74
23 April
24 April
25 April
26 April
27 April
28 April
HUB Begin
1030 21 April 74
1130
28 April 74
<APRIL 21-28, 1974>
F
RH %
LOWER HIDDEN VALLEY (TR 6),
RMNP
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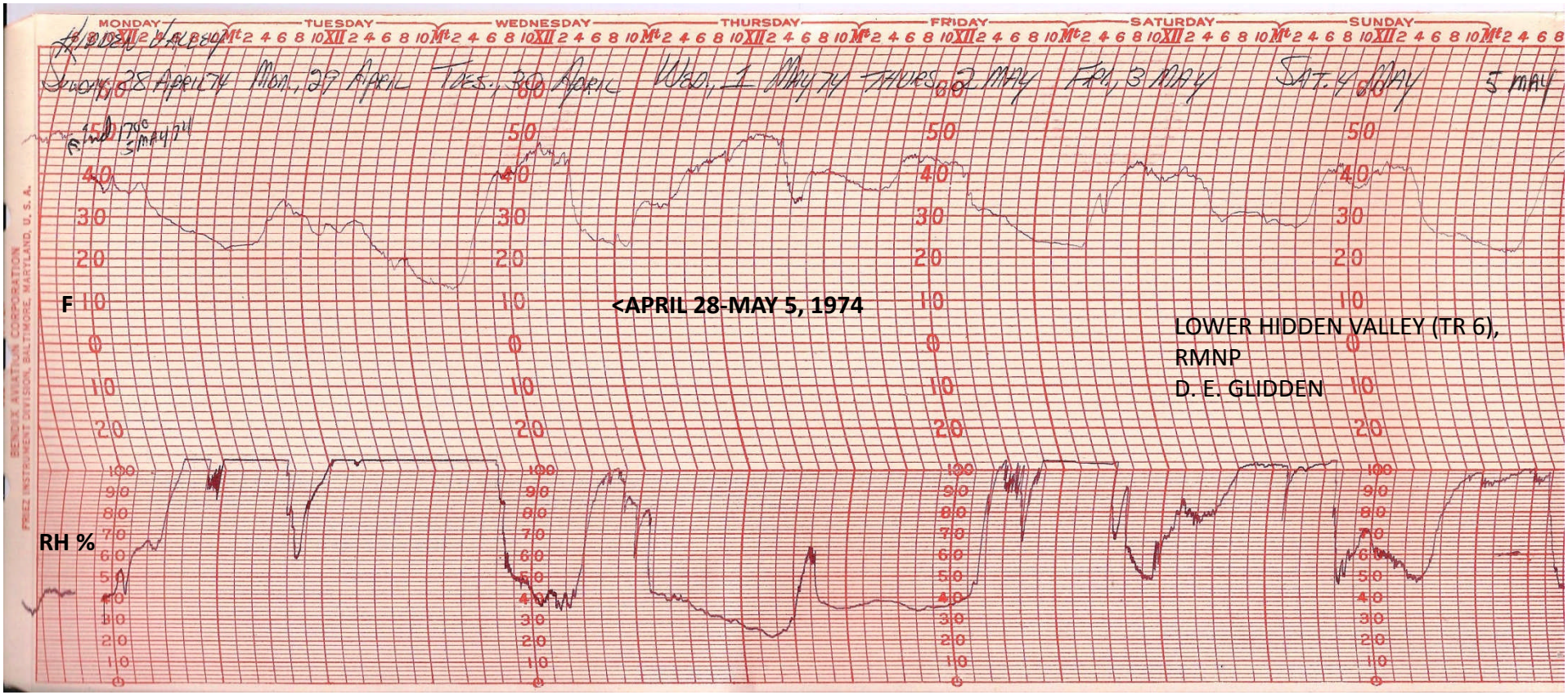
MONDAY
TUESDAY
WEDNESDAY
THURSDAY
FRIDAY
SATURDAY
SUNDAY
Sunday 28 April 74
Mon. 29 April
Tues. 30 April
Wed. 1 May 74
Thurs. 2 May
Fri. 3 May
Sat. 4 May
5 May
F
RH %
<APRIL 28-MAY 5, 1974
LOWER HIDDEN VALLEY (TR 6),
RMNP
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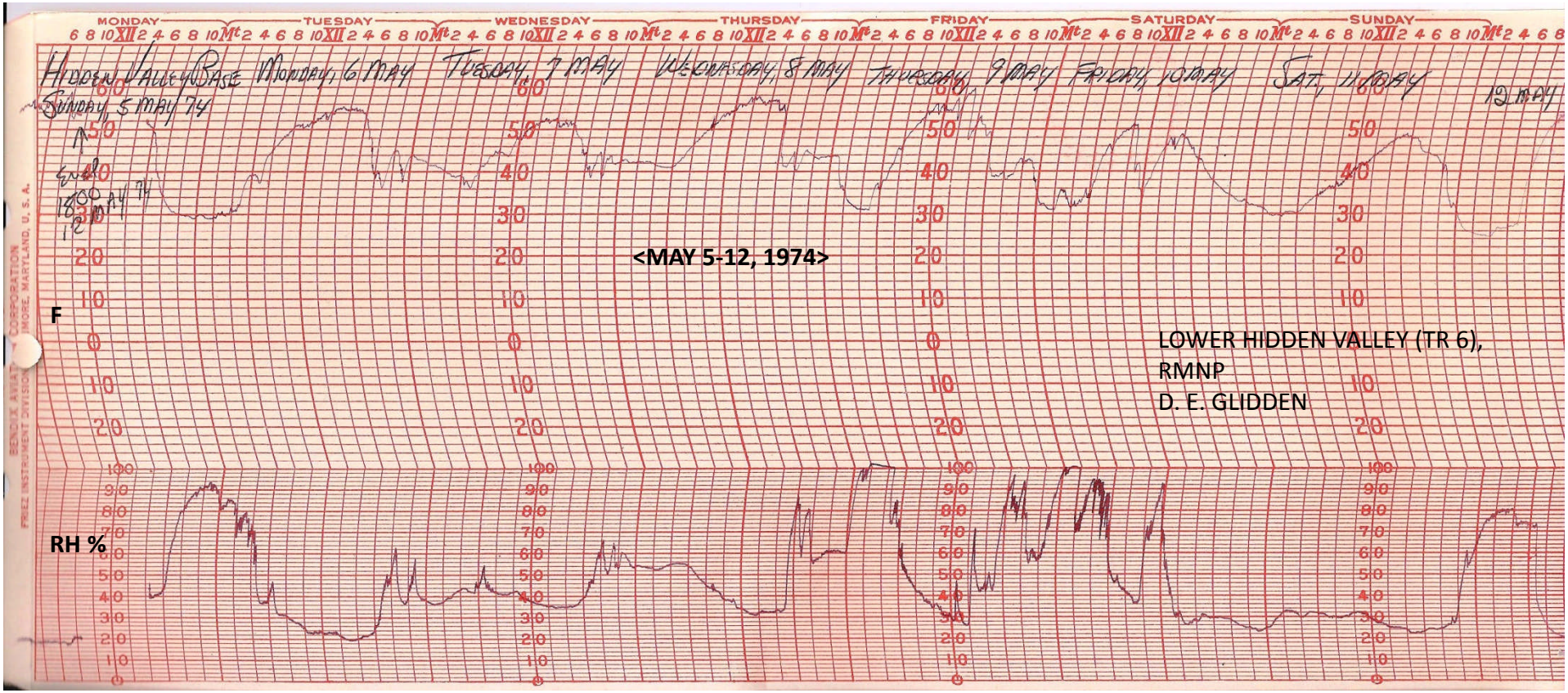
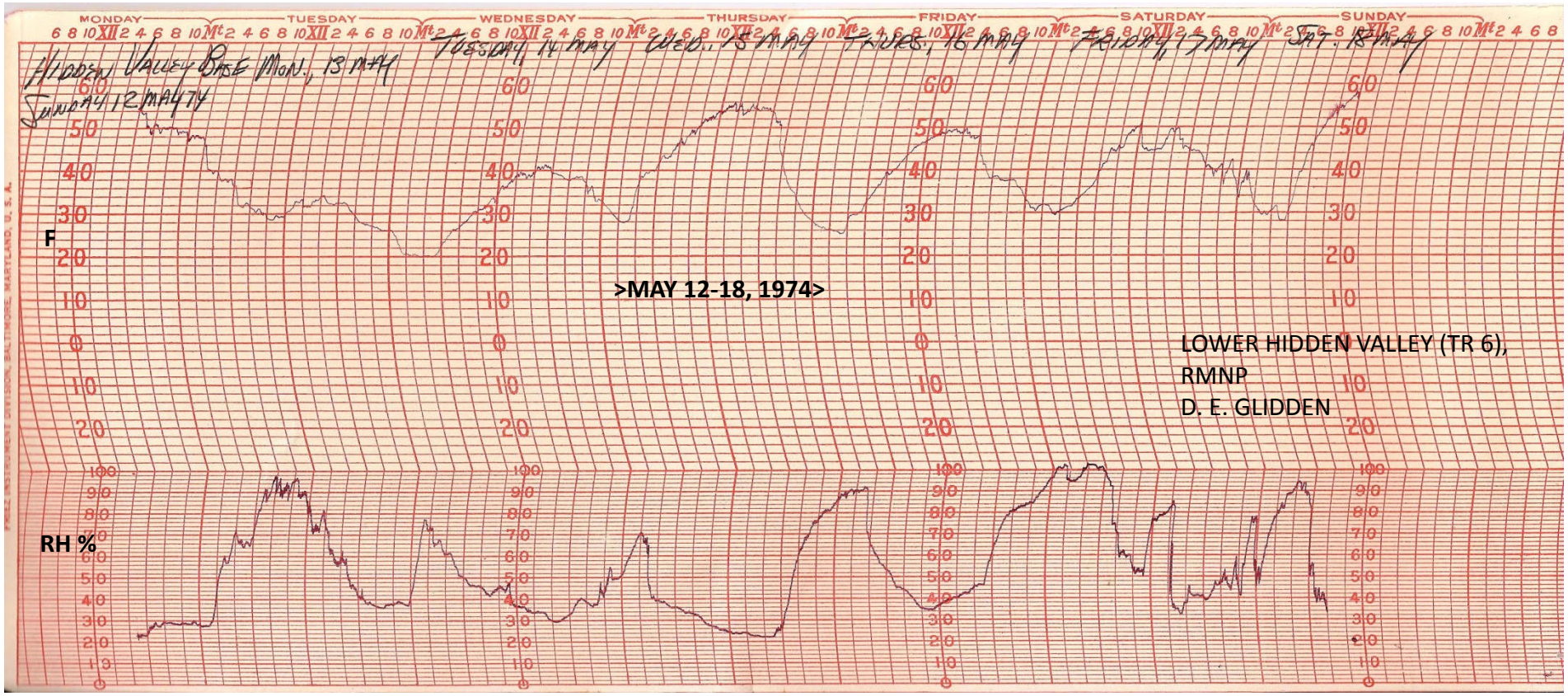
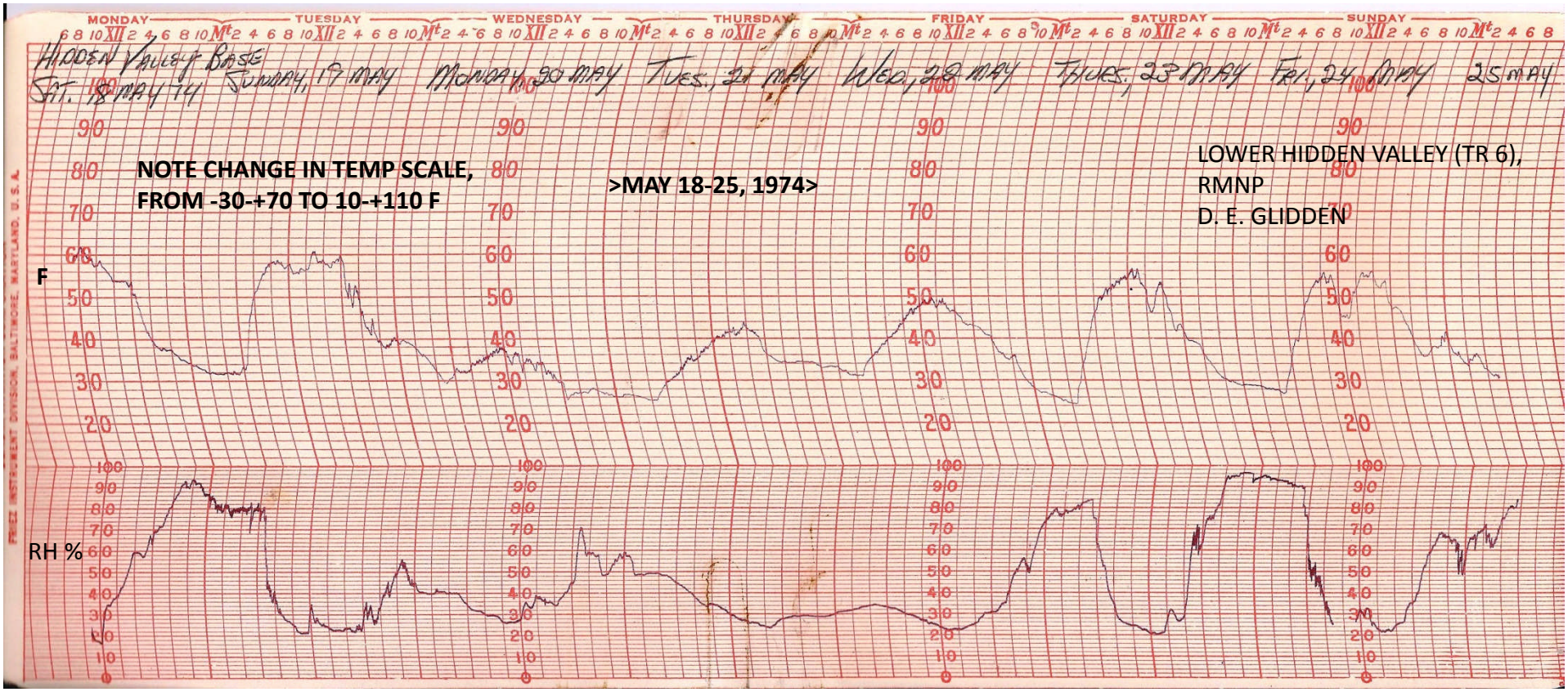
FRIEZ INSTRUMENT DIVISION, BALTIMORE, MARYLAND, U. S. A.


MONDAY
TUESDAY
WEDNESDAY
THURSDAY
FRIDAY
SATURDAY
SUNDAY
Hidden Valley Base Monday, 6 May Tuesday 7 May Wednesday, 8 May Thursday 9 May Friday 10 May Sat, 11 May 12 May
Sunday 5 May 74
<MAY 5-12, 1974>
F
RH %
LOWER HIDDEN VALLEY (TR 6),
RMNP
D. E. GLIDDEN


MONDAY
TUESDAY
WEDNESDAY
THURSDAY
FRIDAY
SATURDAY
SUNDAY
Hidden Valley Base Mon., 13 May 74
Tuesday, 14 May
Wed., 15 May
Thurs., 16 May
Friday, 17 May
Sat., 18 May
Sunday 12 May 74
F
RH %
>MAY 12-18, 1974>
LOWER HIDDEN VALLEY (TR 6),
RMNP
D. E. GLIDDEN


MONDAY
TUESDAY
WEDNESDAY
THURSDAY
FRIDAY
SATURDAY
SUNDAY
HIDDEN VALLEY BASE
SAT. 18 MAY 74
SUNDAY, 19 MAY
MONDAY, 20 MAY
TUES., 21 MAY
WED, 22 MAY
THURS, 23 MAY
FRI, 24 MAY
25 MAY
NOTE CHANGE IN TEMP SCALE,
FROM -30-+70 TO 10-+110 F
>MAY 18-25, 1974>
LOWER HIDDEN VALLEY (TR 6),
RMNP
D. E. GLIDDEN
F
RH %
FREZ INSTRUMENT DIVISION, BALTIMORE, MARYLAND, U.S.A.