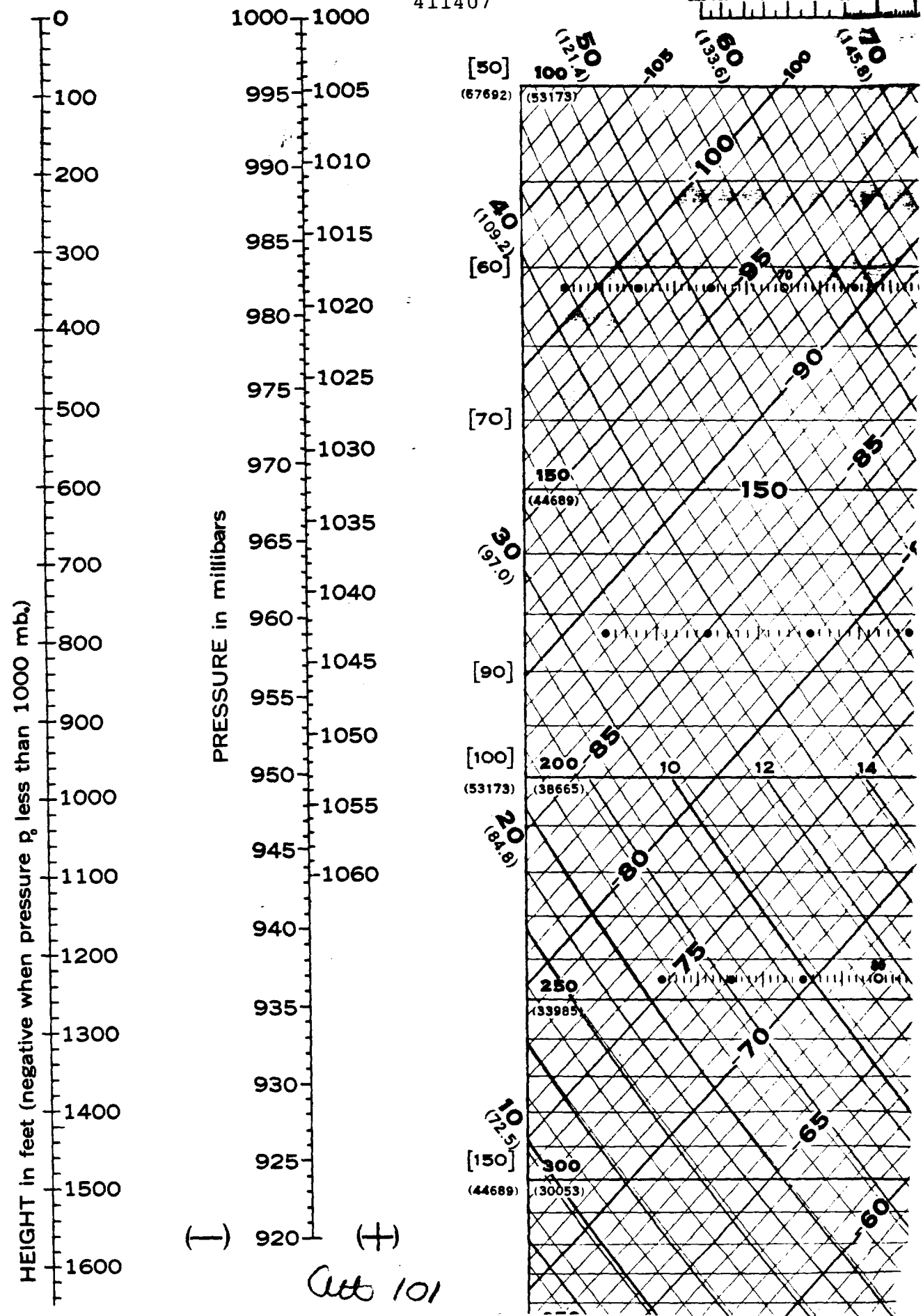
SAA2000886 0000
DOCUMENT#

Form: AWS WPC 9-16

411407




Att 101

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FT. GROVES A.D.C. DATE:
02-10-97
11-12-97

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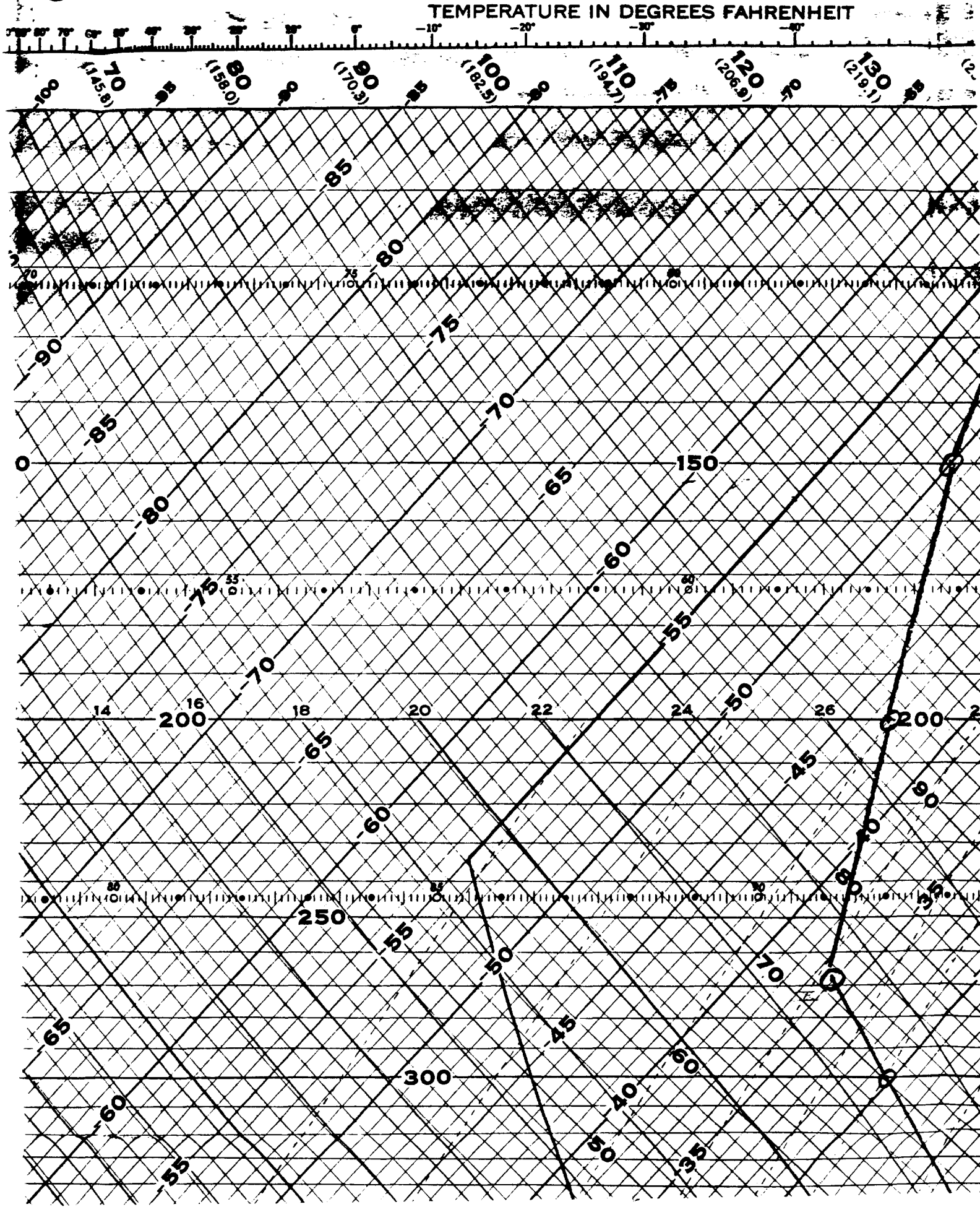
UNCLASSIFIED CONTROLLED
NUCLEAR INFORMATION

# USAF SKEW T, log p DIAGRAM



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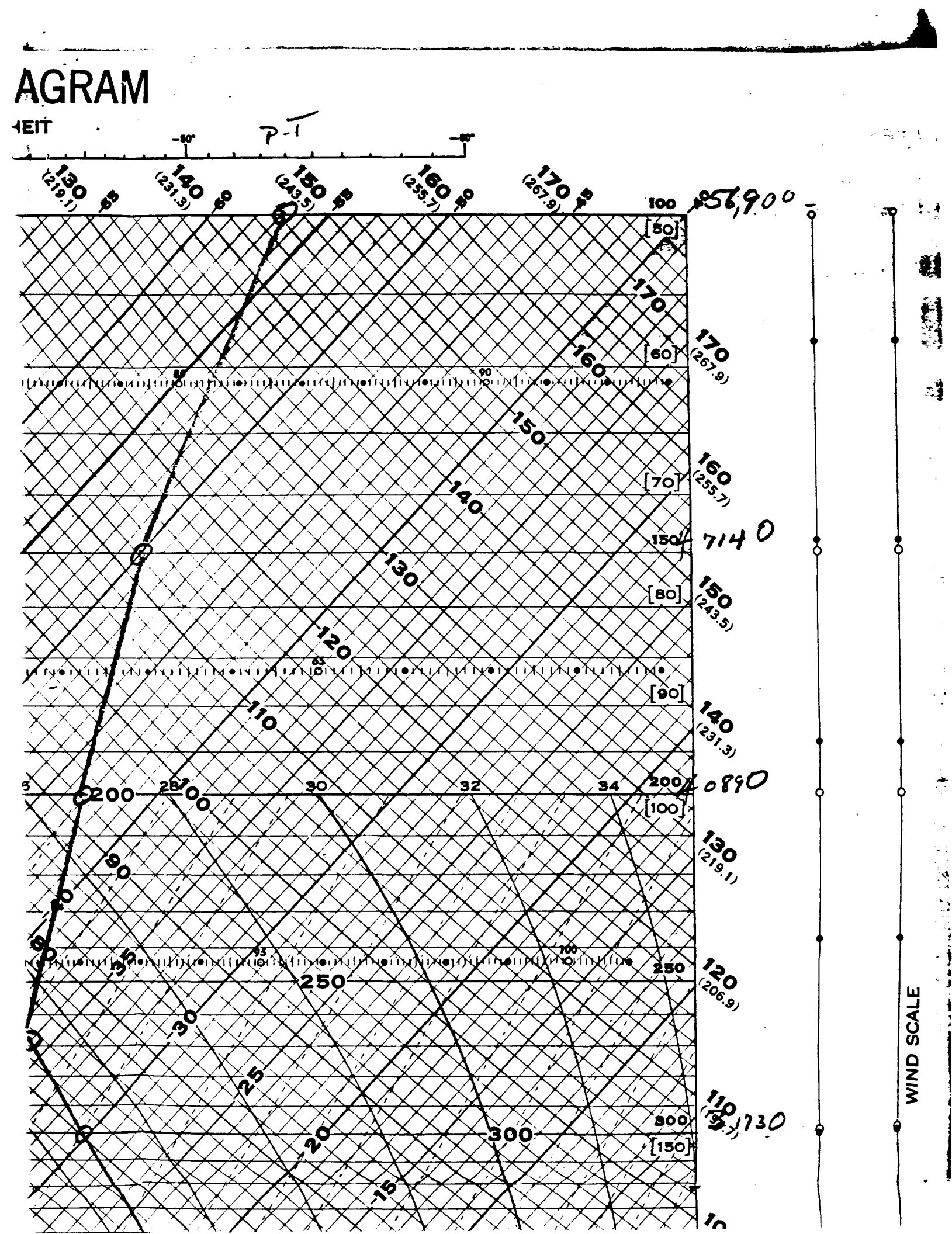
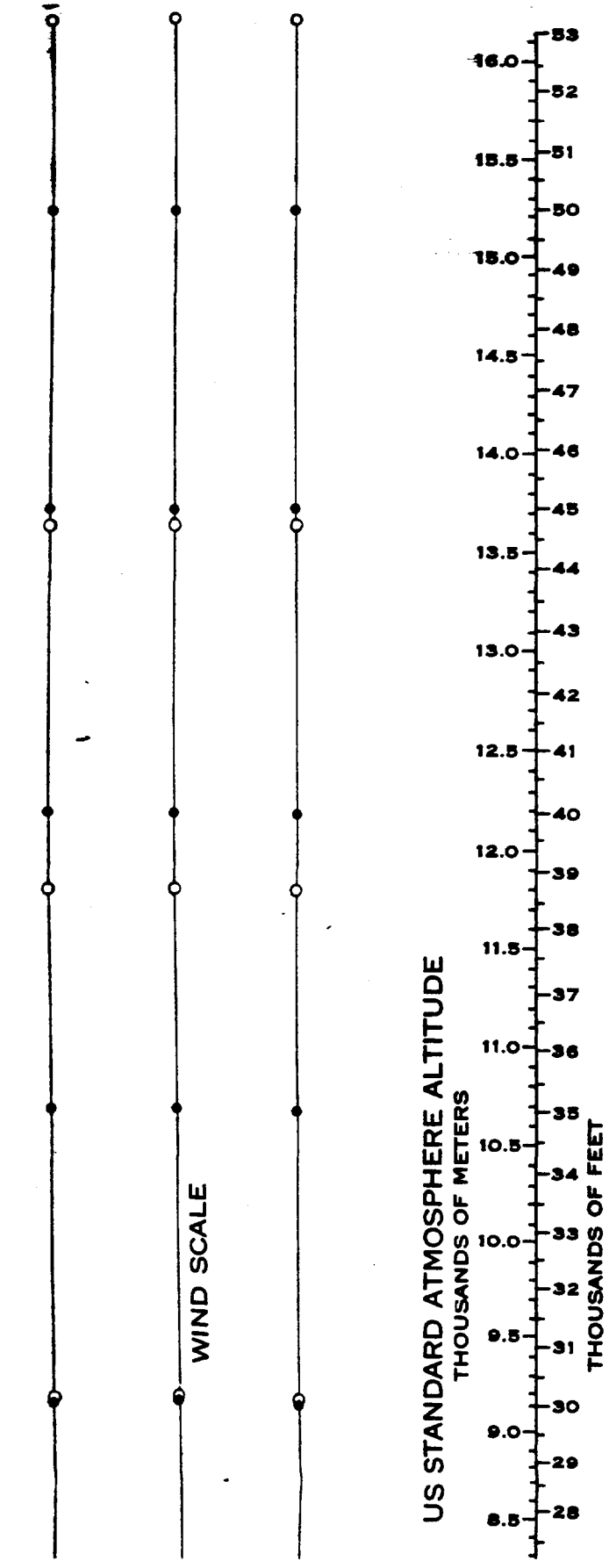

HEIT
P-1
130 (219.1)
140 (231.3)
150 (243.5)
160 (255.7)
170 (267.9)
WIND SCALE




# EXPLANATION

**ISOBARS** are straight, horizontal brown lines. The heights in feet of the pressure surfaces in the U.S. Standard atmosphere are in parenthesis () below the pressure values on the left.

**ISOTHERMS** (°C) are the straight, equidistant brown lines running diagonally upward from left to right.

**DRY ADIABATS** are the slightly curved brown lines that intersect the 1000 mb. isobar at intervals of 2°C, and run diagonally upward from right to left. The Dry Adiabats for the folded portion of the pressure range are labeled with two (2) values. (See below).

**SATURATED ADIABATS** are the curved green lines that intersect the 1000 mb. isobar at intervals of 2°C, diverging upward and tending to become parallel to the dry adiabats.

**SATURATION MIXING RATIO** (in gm. per kg.) is represented by dashed green lines. Their values appear at the bottom of diagram.

**THICKNESS** (in hundreds of geopotential feet) of the layers between the levels 1000, 700, 500, 300, 200, 150 and 100 mb. is represented by numbers and a graduation along the middle of each layer. The thicknesses are obtained from the virtual temperature curve by the equal-area method, using any straight line as a dividing line.

**HEIGHT** in geopotential feet above mean sea level, or station level, of the 1000 mb. surface is obtained from the nomogram in the upper left-hand corner by drawing a straight line from the point on the temperature scale (°F) through the point $p_o$ (mean sea level or station pressure) on the pressure scale, and reading the height on the height scale.

**U.S. STANDARD ATMOSPHERE SOUNDING** is indicated by a thick brown line.

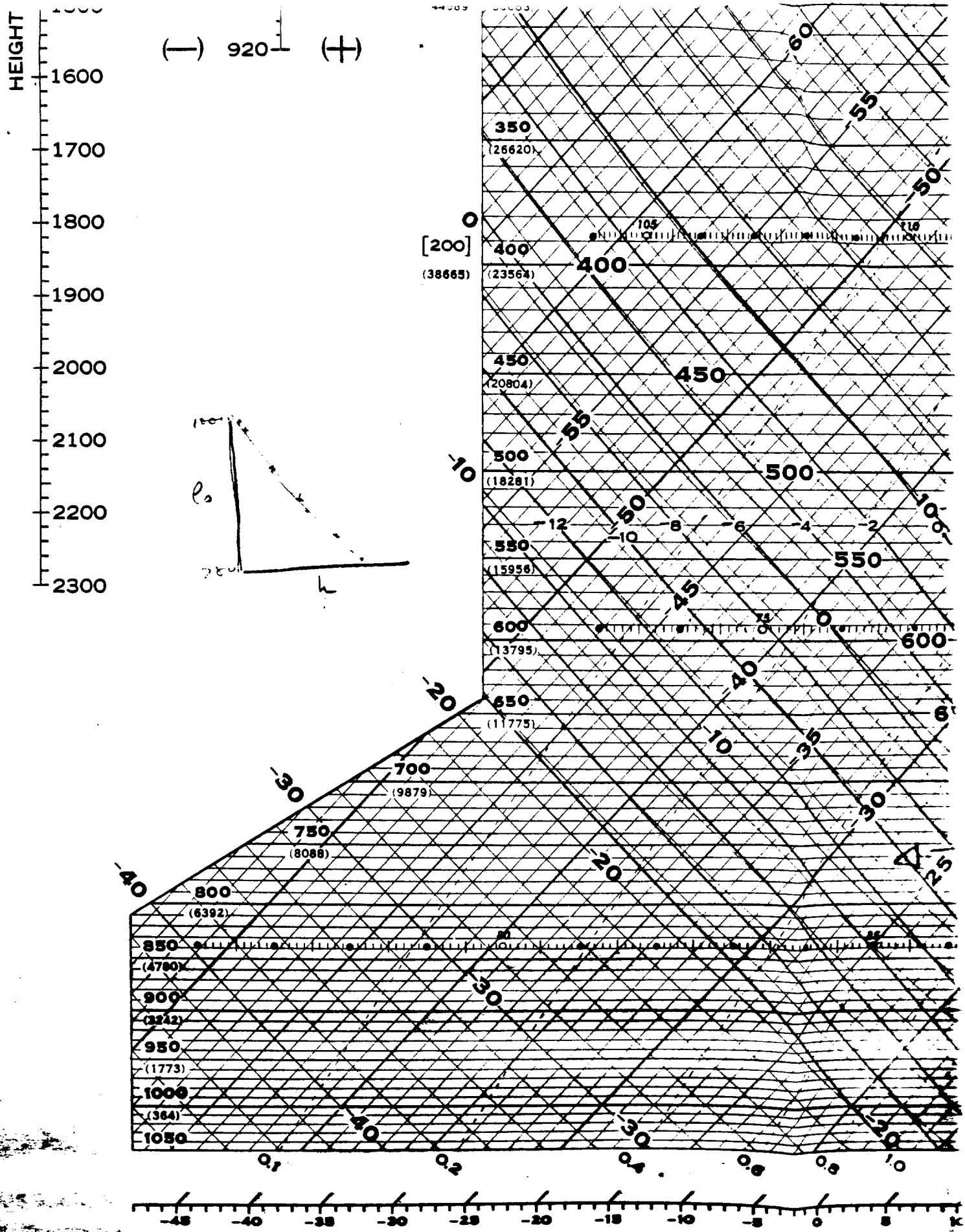
The saturated adiabats and isopleths of saturation mixing ratio are computed by use of vapor pressure over a plane water surface at all temperatures.

Extension of chart to 50 mb has been accomplished by overlap with pressure indicated in brackets, [200] at 400 mb, and [50] at 100 mb. Dry adiabats for the overlap are labeled in parentheses ( ).

**APPROXIMATE VIRTUAL TEMPERATURE** may be obtained from the formula $T_v = T + \frac{w}{6}$ where $T_v$ is virtual temperature in °C, T is free air temperature in °C, and w is mixing ratio in grams/kilogram. For purposes of thickness computation, use the mean temperature of the layer for T and use the mean mixing ratio of the layer for w.

Sounding data will be entered on two (2) sets of charts. One chart will include 0300Z and 1500Z soundings; the other 0900Z and 2100Z soundings. To provide twelve (12) hour continuity the preceding 1500Z or the 2100Z soundings, whichever the case may be, will be entered as a trace of the temperature curve without the reproduction of data or circling of any point. (See AWSM-105-22).

Black dots ● along wind scale lines indicate the levels for which wind data is reported and plotted. The open circles ○ indicate the mandatory pressure levels at which wind data is also entered.

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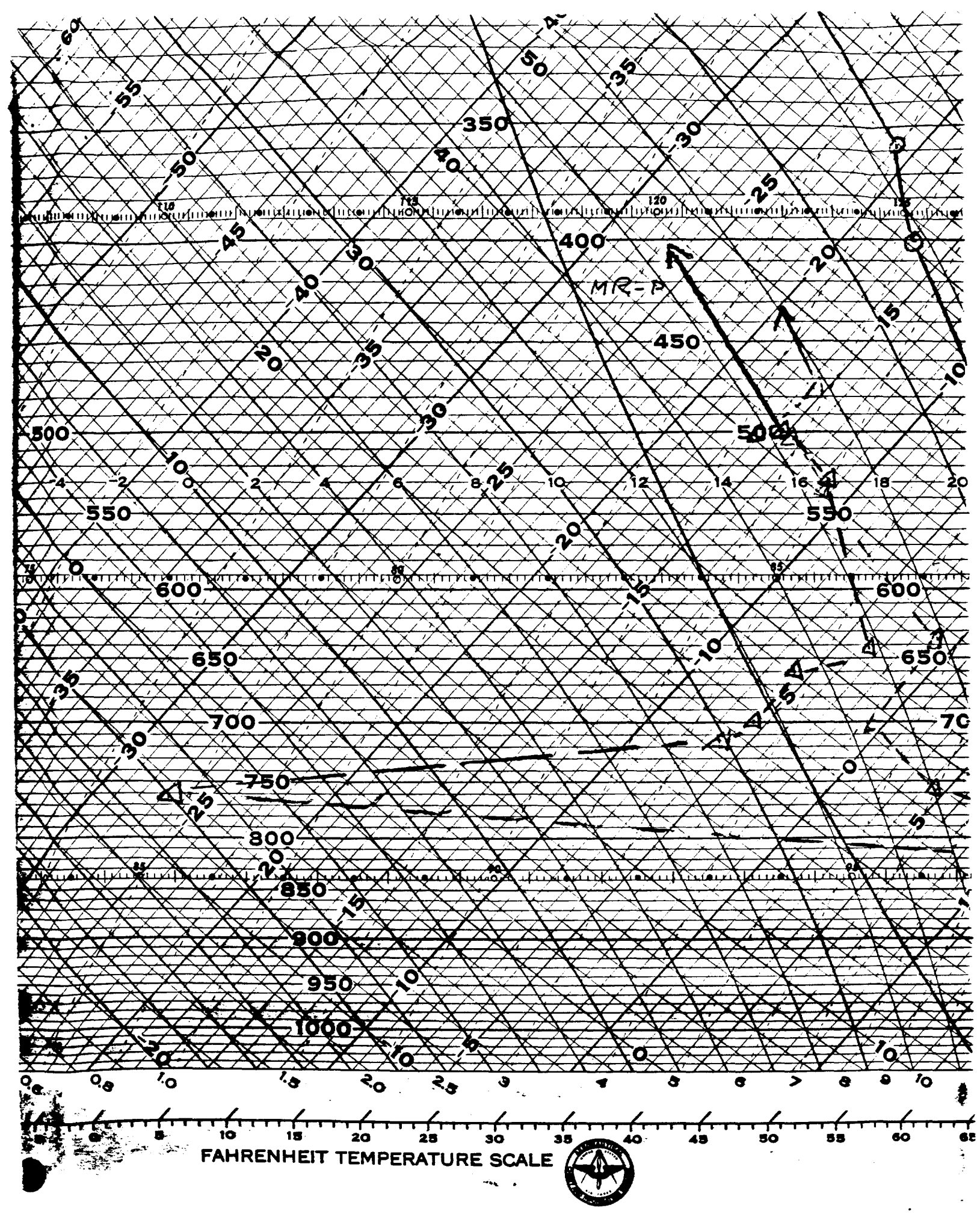
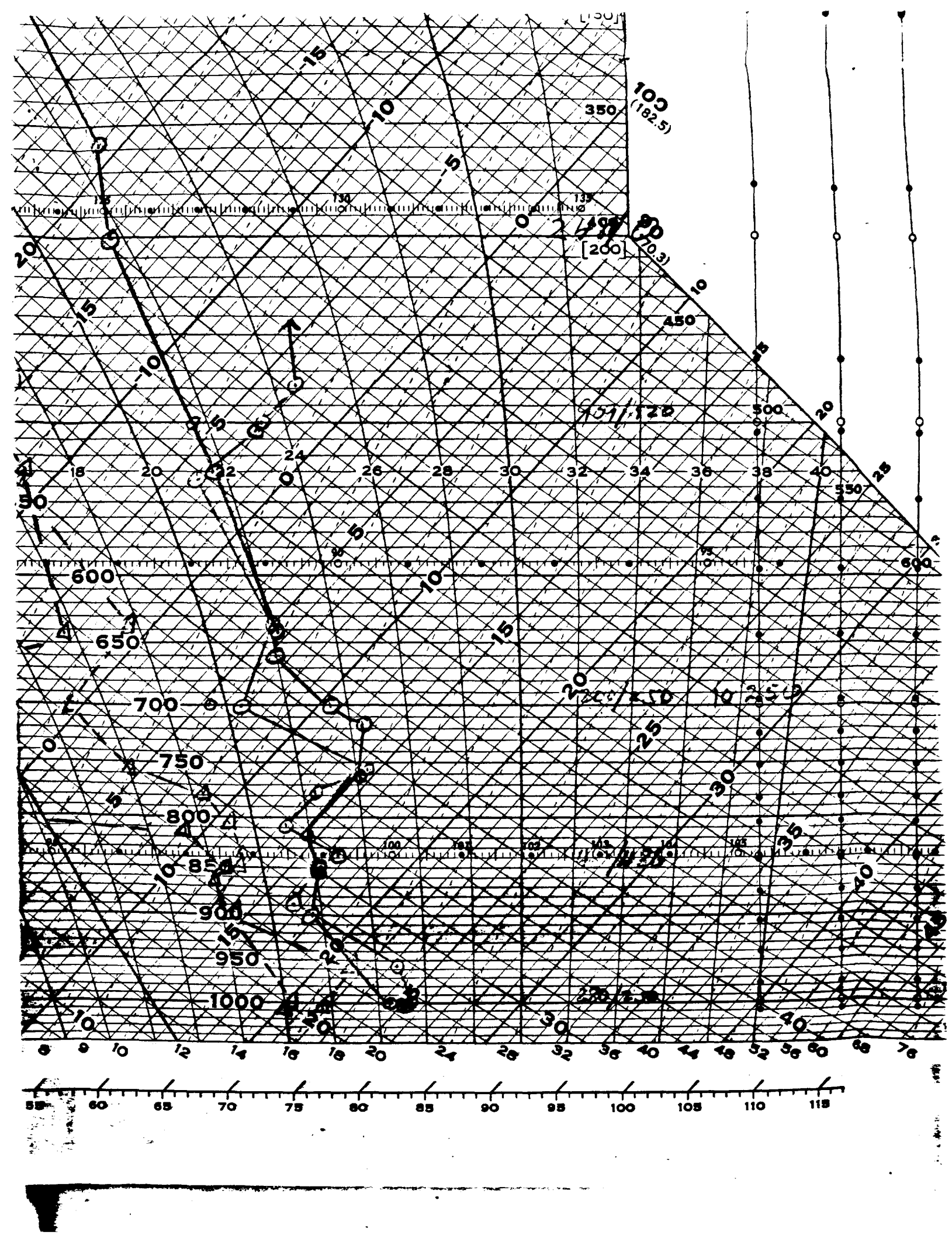

MR-P
FAHRENHEIT TEMPERATURE SCALE


100
(182.5)
350
[200]
(70.3)
450
500
550
600
650
700
750
800
850
900
950
1000
-15
-10
-5
0
5
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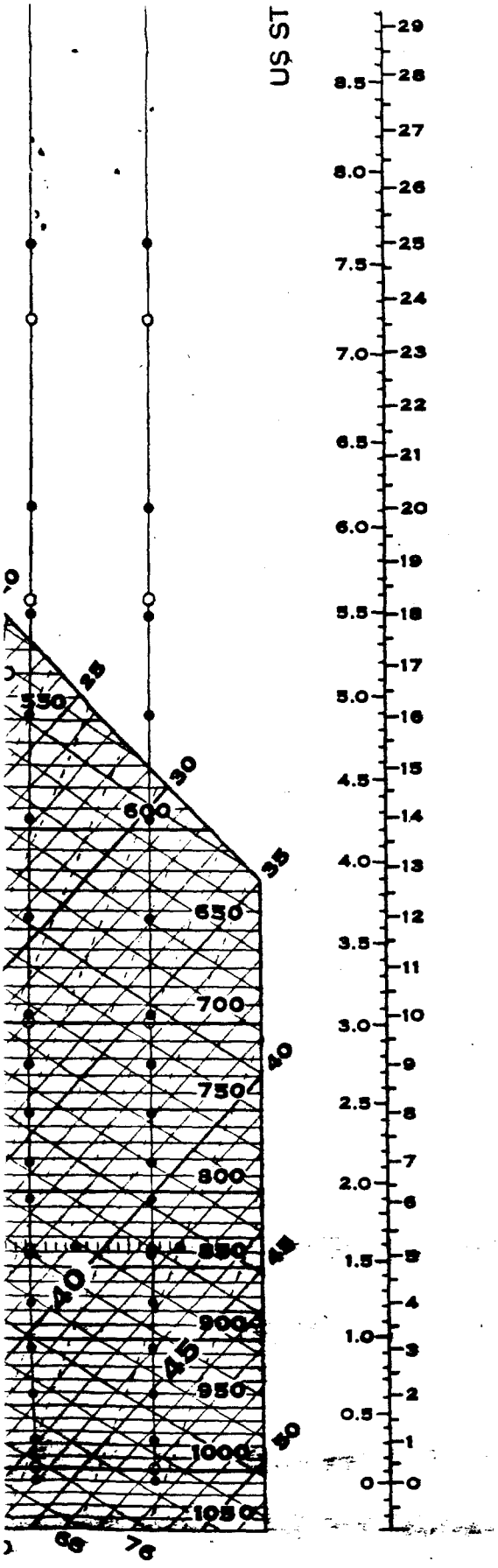
100
105
110
115




$$\rho_0 = \frac{P_{wb}}{2.87\,T^*\,{}^\circ A}$$

| | |
|---|---|
| CVE 115 | BAIROKO |
| NUMBER | STATION |
| 1500 Z | 28 FEB. 54 |
| TIME (GCT) | DATE (GCT) |

| | |
|---|---|
| CVE 115 | BAIROKO |
| NUMBER | STATION |
| 0300 Z R | 1 MARCH 54 |
| TIME (GCT) | DATE (GCT) |

| | |
|---|---|
| | |
| NUMBER | STATION |
| | |
| TIME (GCT) | DATE (GCT) |

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