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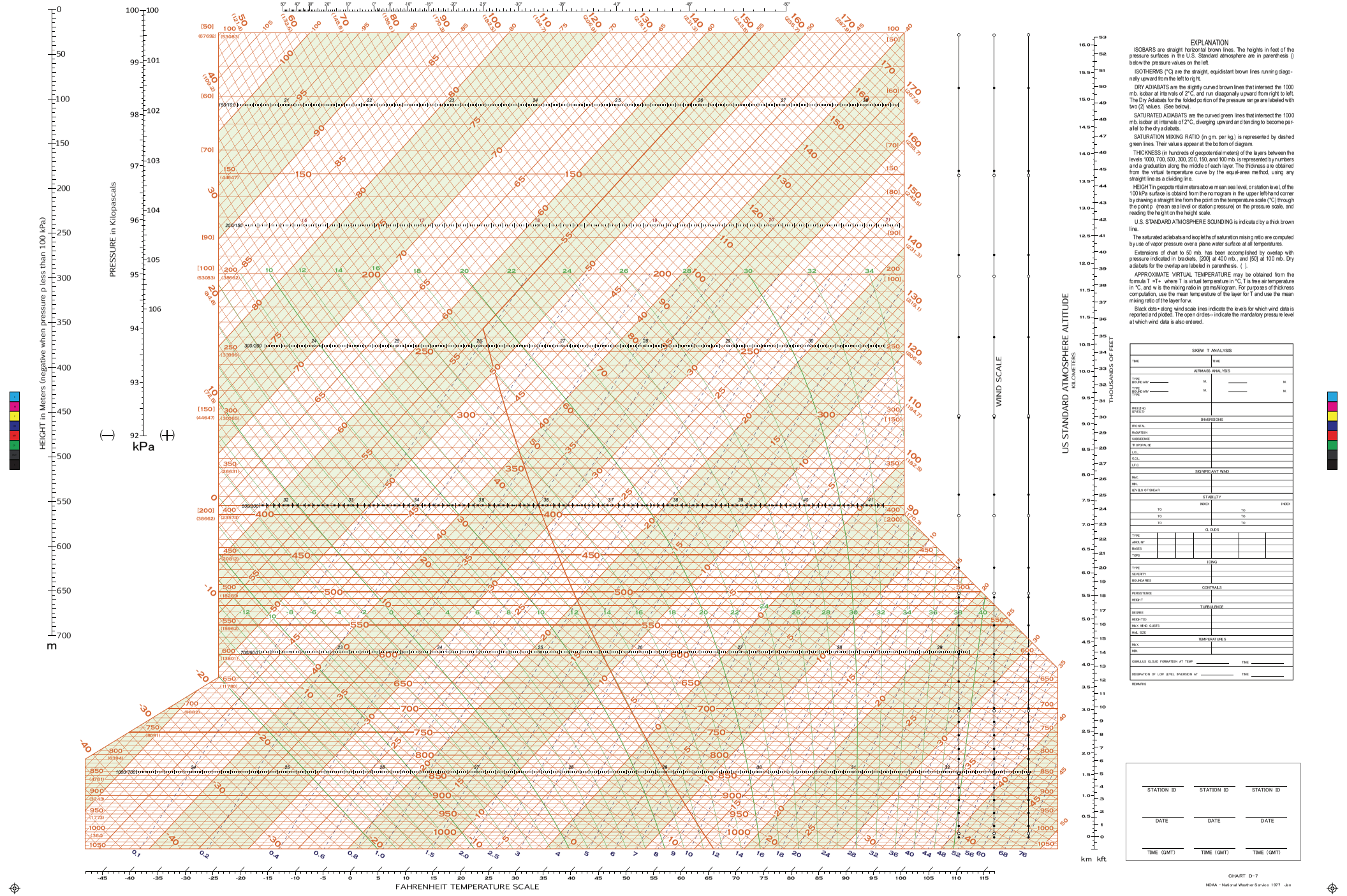
SKEW T ADIABATIC DIAGRAM

TEMPERATURE IN DEGREES CELSIUS



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 the 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 meters) 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 thickness are obtained from the virtual temperature curve by the equal-area method, using any straight line as a dividing line.

HEIGHT in geopotential meters above mean sea level, or station level, of the 100 kPa surface is obtaind from the nomogram in the upper left-hand corner by drawing a straight line from the point on the temperature scale (°C) through the point p (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 mising ratio are computed by use of vapor pressure over a plane water surface at all temperatures.

Extensions 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 parenthesis. ( ).

APPROXIMATE VIRTUAL TEMPERATURE may be obtained from the formula T =T+ where T is virtual temperature in °C, T is free air temperature in °C, and w is the 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.

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

SKEW T ANALYSIS	
TIME	TIME
AIRMASS ANALYSIS	
TYPE BOUNDARY — M	— M
TYPE BOUNDARY — M	— M
TYPE	
FREEZING LEVEL(S)	
INVERSIONS	
FRONTAL	
RADIATION	
SUBSIDENCE	
TROPOPAUSE	
LCL	
CCL	
LFC	
SIGNIFICANT WIND	
MAX.	
MIN.	
LEVELS OF SHEAR	
STABILITY	
INDEX — INDEX	
TO — TO	
TO — TO	
TO — TO	
CLOUDS	
TYPE	
AMOUNT	
BASES	
TOPS	
ICING	
TYPE	
SEVERITY	
BOUNDARIES	
CONTRAILS	
PERSISTENCE	
HEIGHT	
TURBULENCE	
DEGREE	
HEIGHTS	
MAX. WIND GUSTS	
HAIL SIZE	
TEMPERATURES	
MAX.	
MIN.	
CUMULUS CLOUD FORMATION AT TEMP ____	TIME ____
DESIGNATION OF LOW LEVEL INVERSION AT ____	TIME ____
REMARKS	

STATION ID	STATION ID	STATION ID
DATE	DATE	DATE
TIME (GMT)	TIME (GMT)	TIME (GMT)

CHART D-7

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