R. M. YOUNG COMPANY

APPLICATION NOTE AN100

January 1995

SUBJECT: Correcting barometric pressure readings for altitude.

Since air density varies with altitude, barometric pressure readings are commonly normalized to an equivalent sea level value by applying a correction factor based on the altitude of the measurement site. The correction factor may be calculated as follows:

Pcorr = A * (1 - (1 - H/B) ^ C))

where: Pcorr is the correction factor to add to the uncorrected barometric pressure reading
H is the Height (altitude)

For English units (Pcorr in inHg, H in feet):
A = 29.92
B = 145442.2
C = 5.256

For Metric units (Pcorr in mB, H in meters):
A = 1013.25
B = 44330.77
C = 5.256

Example:

Uncorrected barometric pressure reading of 29.13 inHg at 610 ft altitude.

Pcorr = 29.92 * (1 - (1 - 610/145442.2) A 5.256)

Pcorr = 0.65 inHg

Add 0.65 inHg to 29.13 inHg for result.

Barometric pressure reading normalized to sea level = 29.78 inHg

This formula is based on the U.S. Standard Atmosphere, 1976.

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