

Thermoregulation of human is a prerequisite to normal health. Departure from the standard spontaneous thermoregulation can signal physical illness or emotional upset. It can also be a consequence of the environment creating abnormally hot or cold stress.

Signals that are generated from such abnormalities can be useful in health care, definition of human comfort and allow quantitative predictive modeling of the human response to various microclimates.

Two such sets of signals are body and skin temperatures and evaporative sweat rates. Although the temperatures measurements are very well developed, there is not as yet an equivalent capability in the measurement of local sweat rates.

A description of the tasks that are reported herein are as follows:

Task 1: Modification of Hygrometer - The contractor shall modify, as necessary, the hygrometer to minimize any baseline drift in air-flow system.

Task 2: Evaluation of Sweat Rate Measurement - The contractor shall evaluate the effect of the sensor-skin interface on the magnitude of the error.

Task 3: Rates of Sweat Rate Measurement - The contractor shall determine the error in sweat rate measurement at low and high rates of sweating and at different ambient temperatures.

Task 4: Validity of the Lewis No. - The contractor shall determine the validity of the Lewis No. set equal to one.

Task 5: Final report