As the temperature of the air and surrounding objects rises, the los of heat by convection and radiation decreases. When the air temperature reaches that of the body, the loss by radiation and convection ceases.

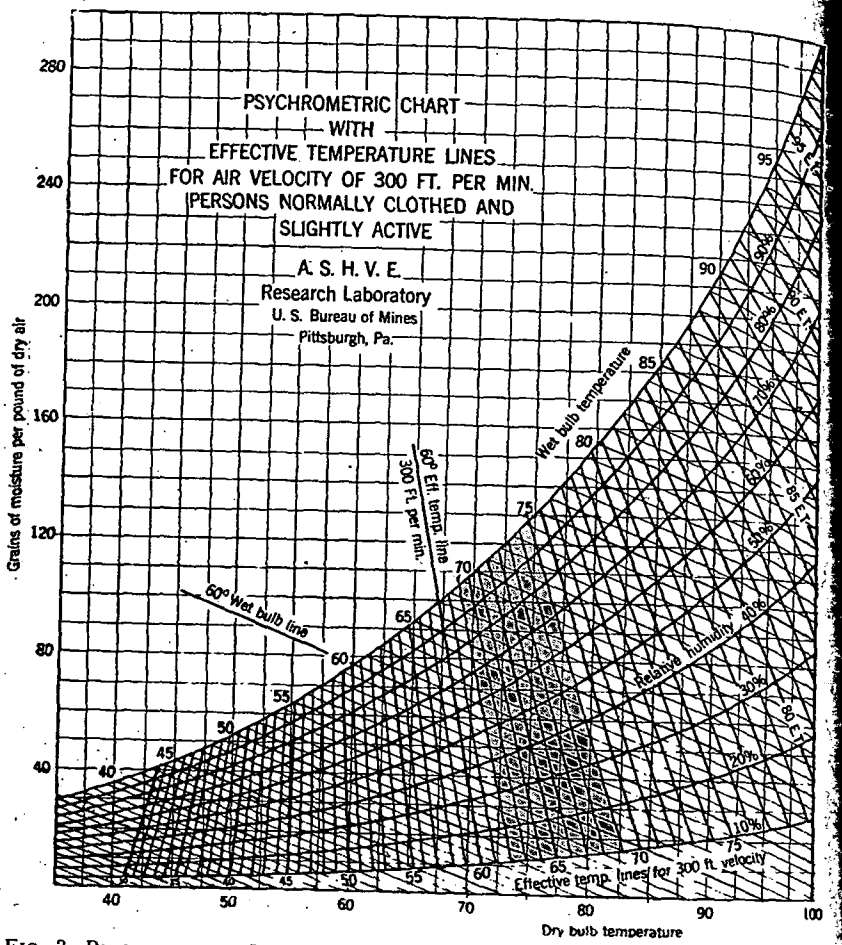


FIG. 3. PSYCHROMETRIC CHART WITH EFFECTIVE TEMPERATURE LINES FOR 300 FT. AIR VELOCITY. (SHADED AREA INDICATES THE COMFORT ZONE)

Finally, as the air temperature exceeds that of the body, heat is transferred from the air to the body.

As the temperature of the air rises and heat loss by radiation and convection decreases, the body endeavors to maintain temperature equilibrium by making available more perspiration, resulting in a greater heat loss by evaporation.

COMFORT CHARTS

From the foregoing, it is concluded that there must necessarily exist certain combinations of temperatures and humidities, which produce the same total body heat loss by radiation, convection, and evaporation, and,

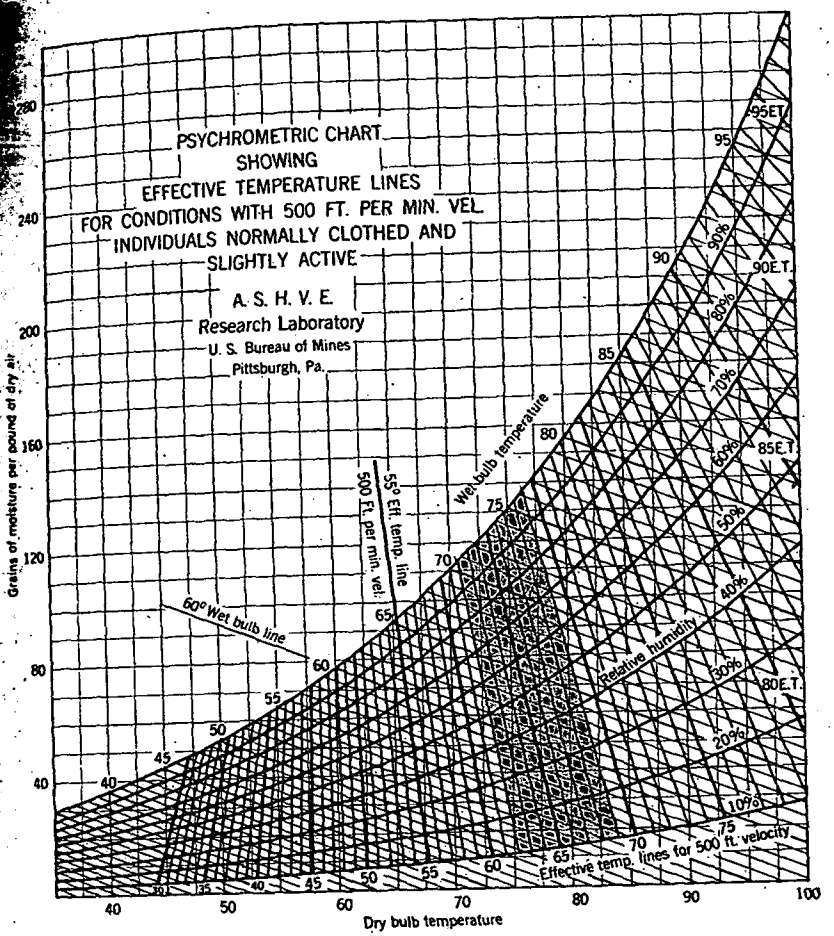


FIG. 4. PSYCHROMETRIC CHART WITH EFFECTIVE TEMPERATURE LINES FOR 500 FT. AIR VELOCITY. (SHADED AREA INDICATES THE COMFORT ZONE)

therefore, the same feeling of comfort or discomfort. Lines passing through such air conditions plotted on a psychrometric chart may be called equal comfort lines.

A series of tests have been made in the two psychrometric rooms of the Research Laboratory of the AMERICAN SOCIETY OF HEATING AND