ture improvement. A 300 ft. air velocity with this new wet and dry bulb will give an effective temperature of 75.7 deg. or a total improvement of 10.0 deg.

For cooling produced by velocities other than those given in Figs. 2, 3 and 4 the reader is referred to the Tables and Examples on page 737 of the November 1926 JOURNAL.

Example 1.—Given dry bulb and wet bulb temperature of 75 and 68 deg. First: what is the effective temperature? Second: is this condition warmer or cooler than 80 deg. dry bulb and 60 deg. wet bulb?

Answer.—The first condition is given by the intersection of the 75 deg. dry bulb line and the 68 deg. wet bulb line. The effective temperature is given by the numerical

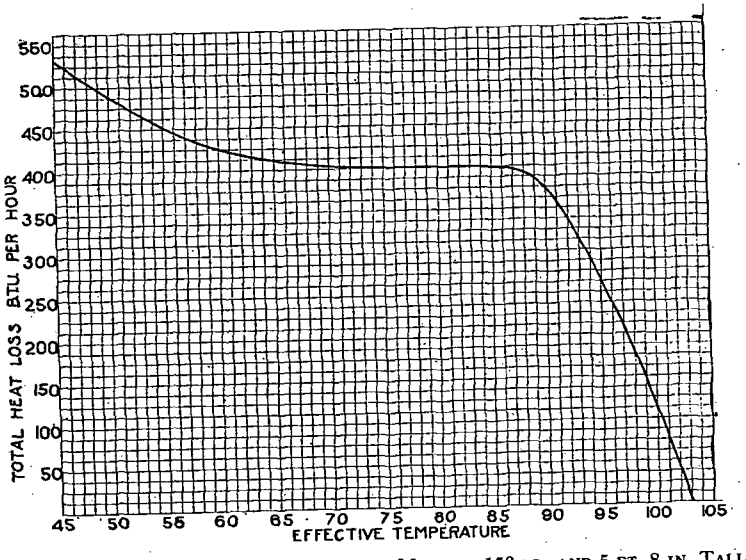

FIG. 6. TOTAL HEAT LOSS FOR AVERAGE MAN OF 150 LB. AND 5 FT. 8 IN. TALL

value of the effective temperature line, passing through this point and indicated by the scale along the saturation curve, and is 71.9 deg. effective temperature. The second condition is given by the intersection of 80 deg. dry bulb and 60 deg. wet bulb and is 71.7 deg. effective temperature. It is therefore 0.2 deg. effective temperature cooler than the first condition.

Example 2.—Given 76 deg. dry bulb and 61 deg. wet bulb how many degrees difference between this condition and the comfort line or 64 deg. effective temperature?

Answer.—The effective temperature of this condition is given by the intersection of the 76 deg. dry bulb and 61 deg. wet bulb lines and is 70 deg. effective temperature or 6 deg. effective temperature warmer than the comfort line.

Example 3.—Given the dry and wet bulb temperatures in a room 76 and 54 deg. respectively, what air velocity will be necessary to make this condition ideally comfortable, that is, 64 deg. effective temperature?

Answer.—From Fig. 1 for still air it will be seen that this condition has an effective temperature of 68.1 deg. in still air, while an air velocity of 300 ft. (see Fig. 3) gives an effective temperature of 64.7 deg. A velocity of something more than 300 ft. per minute

will give the desired result. The exact velocity may be found by looking through the various tables 2 to 7, for moving air, in the JOURNAL OF THE AMERICAN SOCIETY OF HEATING AND VENTILATING ENGINEERS, November 1926.

Example 4.—Given a condition having dry and wet bulb temperature of 90 and 85 deg. respectively, how much cooler will this condition feel if 300 ft. air velocity is supplied instead of still air?

Answer.—From Fig. 1 it will be found that this condition in still air has an effective temperature of 86.6 deg., while if the air has 300 ft. velocity it will be found from Fig. 3 that it will have an effective temperature of 83.8 deg. Cooling of 2.8 deg. will be produced by the 300 ft. air velocity.

There are many applications for these data. In warm weather it is especially desirable to have greater comfort in school rooms, theaters,

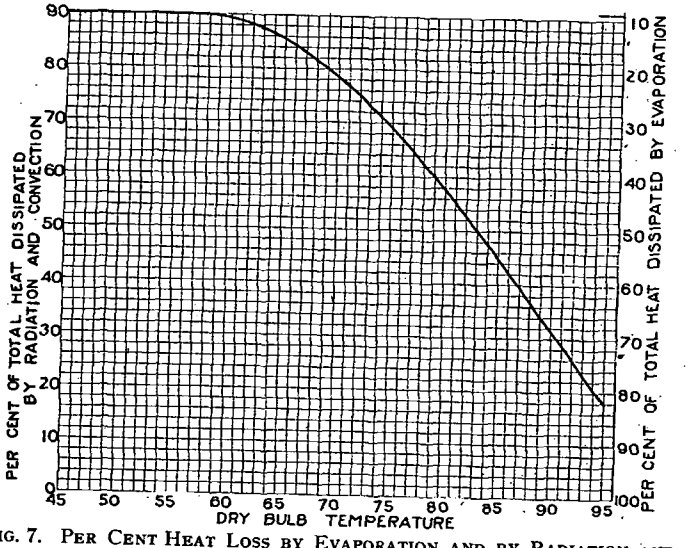

FIG. 7. PER CENT HEAT LOSS BY EVAPORATION AND BY RADIATION AND CONVECTION

auditoriums, also factories, foundries, iron, steel and glass works, mines and other places where workers are subjected to extreme temperature conditions. Maintaining comfortable conditions indoors in summer when the thermometer registers about 95 deg. is a more complicated problem than maintaining the proper condition in winter.

Effective cooling, using cold water or refrigeration, is frequently resorted to in theaters and other public buildings and this practice may be expected to increase.

HOW RELATIVE HUMIDITY AFFECTS HUMAN COMFORT

Relative humidity has a bearing on the well being of man besides having an effect in determining his feeling of warmth. While its effect on health and comfort has never been thoroughly investigated, and while authorities do not agree as to reasons why a high or a low humidity is