

temperature in summer and winter have been added to the chart. The summer comfort zone is indicated as extending from 66 ET to 75 ET with a maximum of 98 per cent comfortable at 71 ET. The winter comfort zone extends from 63 ET to 71 ET with a maximum of 97 per cent comfortable at 66 ET. The 71 ET and 66 ET lines are referred to, respectively, as the summer and winter comfort lines.

The comfort zones and lines as shown in Fig. 6 are based on research prior to 1932. Later studies²⁸ by the A.S.H.V.E. Research Laboratory

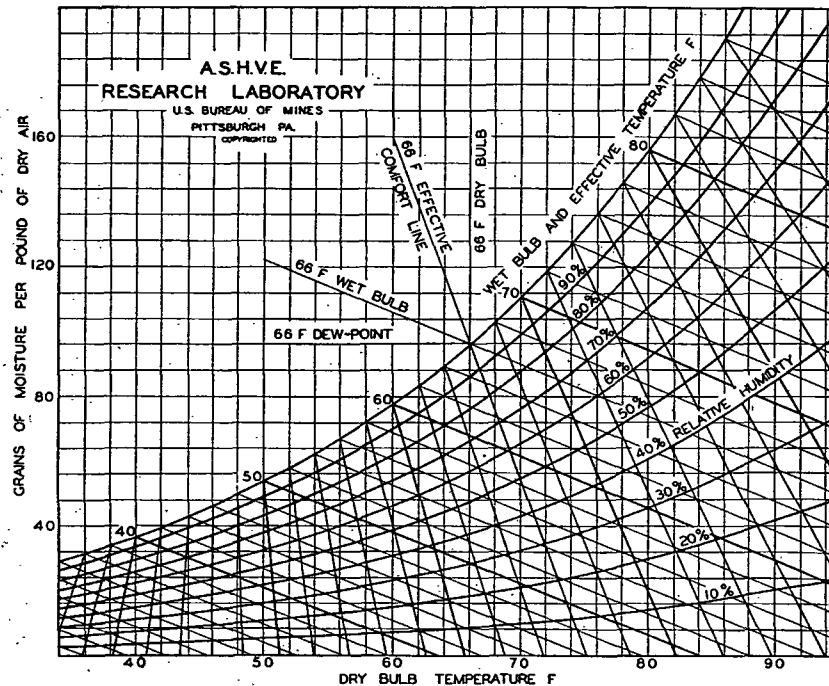


FIG. 4. PSYCHROMETRIC CHART, PERSONS AT REST, NORMALLY CLOTHED, IN STILL AIR

indicate a desirable winter effective temperature of 67 deg, and this finding is confirmed by current practice. The shape of the curve showing the per cent of subjects comfortable in winter also justifies this conclusion, since a drop of only one degree from the 66 ET line seriously reduced the percentage of subjects comfortable.

The comfort zones in Fig. 6 are located between the 30 per cent and 70 per cent relative humidity lines. There is some evidence that the zones could be extended somewhat beyond these limitations.

It should be emphasized that a satisfactory system will not necessarily result by designing for just any combination of conditions within the boundaries of the comfort zone. As pointed out, the comfort zone covers all conditions under which 50 per cent or more of the subjects were comfortable. An air conditioning system which leaves 50 per cent of the

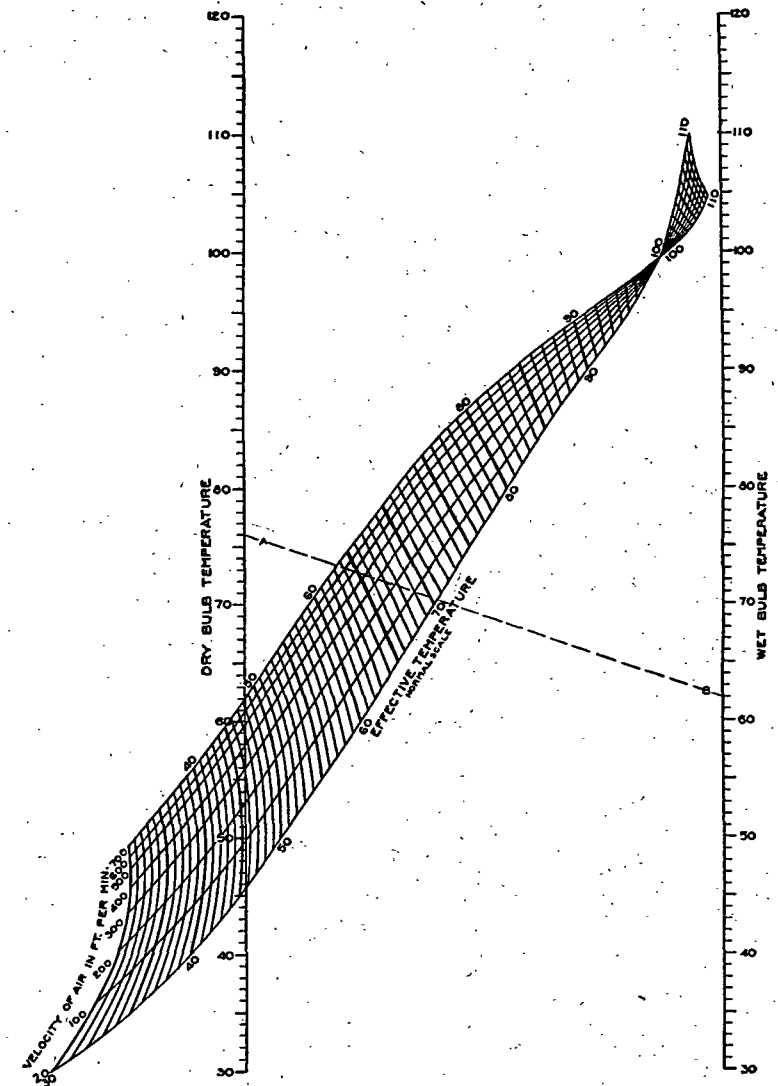


FIG. 5. EFFECTIVE TEMPERATURE CHART SHOWING NORMAL SCALE OF EFFECTIVE TEMPERATURE. APPLICABLE TO INHABITANTS OF THE UNITED STATES UNDER FOLLOWING CONDITIONS:

A. Clothing: Customary indoor clothing. B. Activity: Sedentary or light muscular work. C. Heating Methods: Convection type, *i.e.*, warm air, direct steam or hot water radiators, plenum systems.