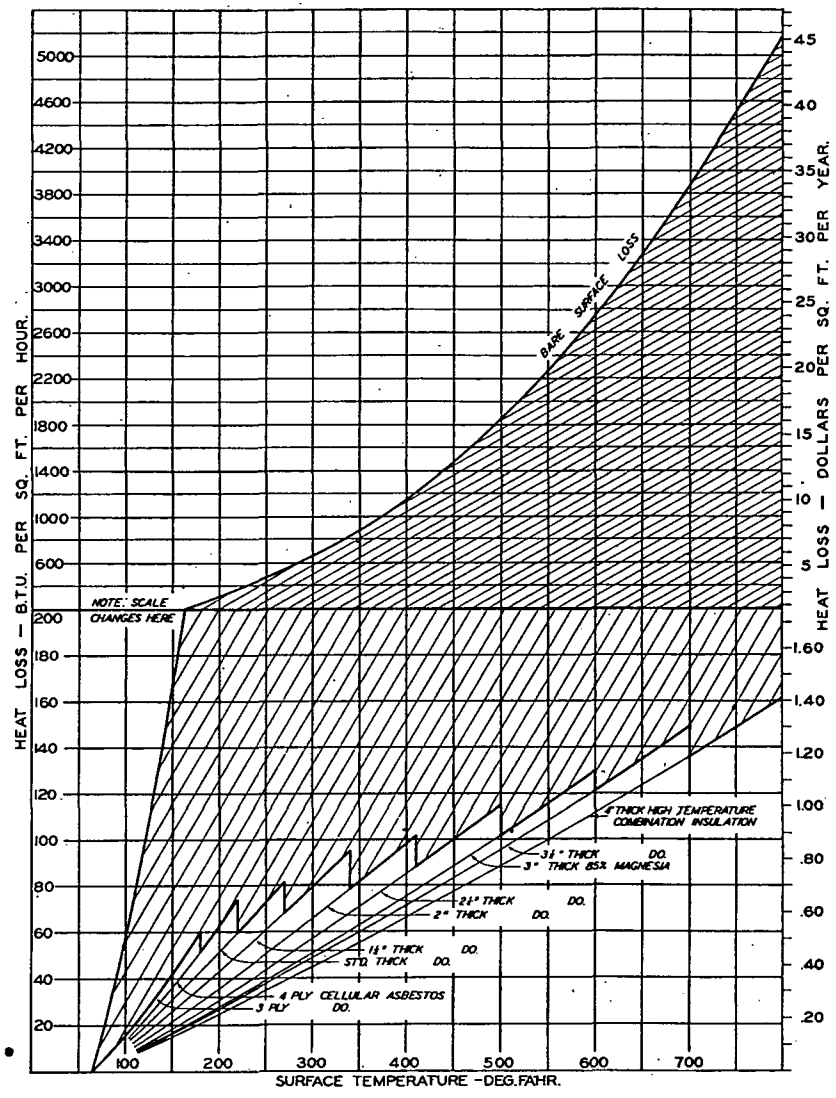

FIG. 68. LOSSES FROM APPROPRIATELY INSULATED SURFACES AS COMPARED WITH LOSSES FROM BARE SURFACES

Note.—The scale showing Dollars loss per sq. ft. per year is based on a unit cost of $1.00 per 1,000,000 B.t.u. *The actual cost is usually less than this* where heat is derived directly from burning coal or oil, but may be greater where illuminating gas or electricity is the source of heat. However, the use of $1.00 as the unit greatly simplifies the use of the chart in connection with any cost per 1,000,000 available B.t.u. All that is necessary is to multiply the values from the chart by the ratio of the actual cost to $1.00. For example, if the cost of heat is $.50 per 1,000,000 B.t.u., multiply values from the chart in dollars by 0.5, etc.

per degree temperature difference per hour (Curve 1, TRANS. A. S. H. & V. E., Vol. 26, P. 368) and the total losses in pounds of coal per year (Curve 2). The latter is based on 10,000 B.t.u. available per pound of coal and 8760 hours per year. Where surfaces are not heated for entire year, losses for actual period of operation may readily be obtained by multiplying values taken from Curve 2 by the appropriate proportion. This also applies to the losses in dollars per year shown in Fig. 68.

HEAT LOSSES FROM INSULATED SURFACES

Fig. 68 shows the losses from appropriately insulated surfaces compared with losses from bare surfaces. It will be noted that it was necessary to plot the upper part of the bare surface curve to a greatly reduced scale in order to show it on the same sheet with the curves for losses through insulation. Therefore, for a true measure of the relative losses from bare and insulated surfaces, compare the numerical value of the ordinates of the curves rather than the apparent spaces between the curves on the chart.

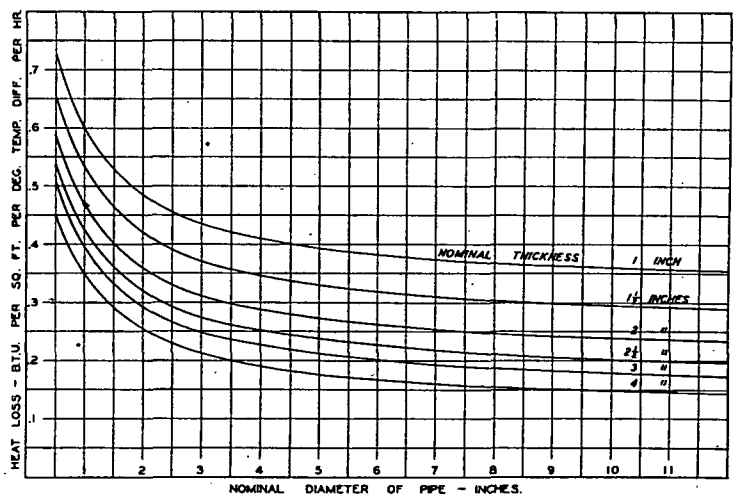

FIG. 69. VARIATION WITH PIPE SIZE OF RATE OF HEAT TRANSMISSION THROUGH A GIVEN THICKNESS OF INSULATION

The chart, Fig. 68, is based on still air conditions, room temperature of 70 deg. fahr., and 5 in. pipe size. The effect of pipe size on losses through insulations of various thicknesses is shown in Fig. 69. (TRANS. A. S. H. & V. E., Vol. 26, p. 375).

For equations by means of which heat losses may be calculated for any thickness of insulation on any pipe size see TRANS. A. S. H. & V. E., Vol. 26, p. 360. Refer also to manufacturers' data for heat losses and efficiencies of different insulations on various sizes of pipes.