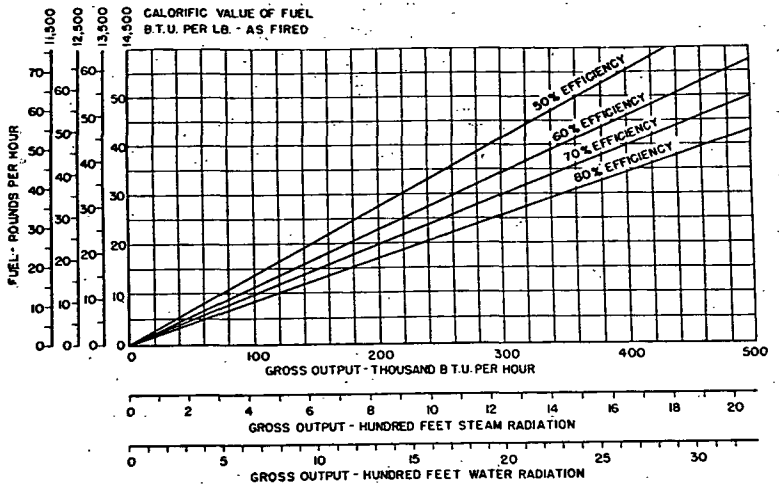


FIG. 4. COAL FUEL BURNING RATE CHART.

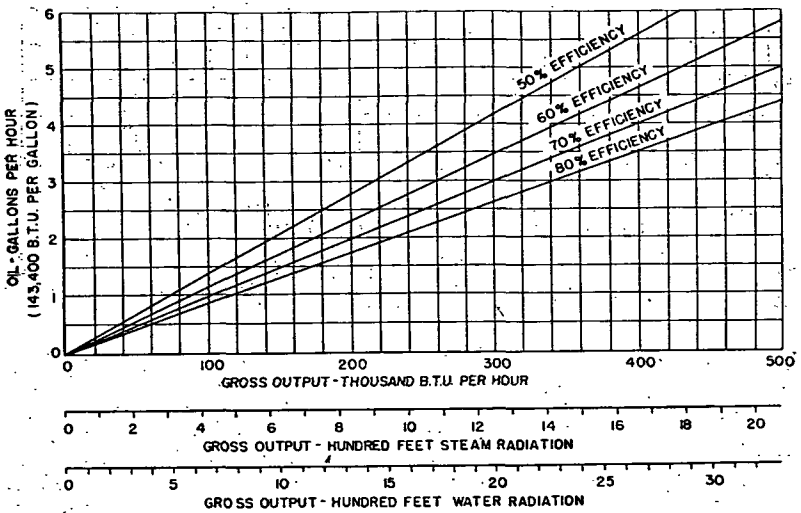


FIG. 5. OIL FUEL BURNING RATE CHART.[a]

[a]This chart is based upon No. 3 oil having a heat content of 143,400 Btu per gallon. If other grades of oil are used multiply the value obtained from this chart by the following factors: No. 1 oil (139,000 Btu per gallon) 1.032; No. 2 oil (141,000 Btu per gallon) 1.017; No. 4 oil (144,500 Btu per gallon) 0.992; No. 5 oil (146,000 Btu per gallon) 0.982; and No. 6 oil (150,000 Btu per gallon) 0.956

For hot water or warm air heat the fuel consumption is about 0.19 cu ft per degree-day per square foot of equivalent steam *radiation*, that is, per 240 Btu per hour. The actual requirements likewise relatively increase with hot water or warm air systems as the number of degree-days decreases below 3000. For larger installations, that is 1000 sq ft of theoretical *radiation* and above, there is an increase in efficiency, and a consequent decrease in the fuel consumption per degree-day per square foot of heating surface.

The approximate quantities of steam required in New York City per square foot of heating surface for various classes of buildings are given in Chapter 42.

The preceding discussion on fuel consumption has dealt with the heating requirements of the building irrespective of any air that may be

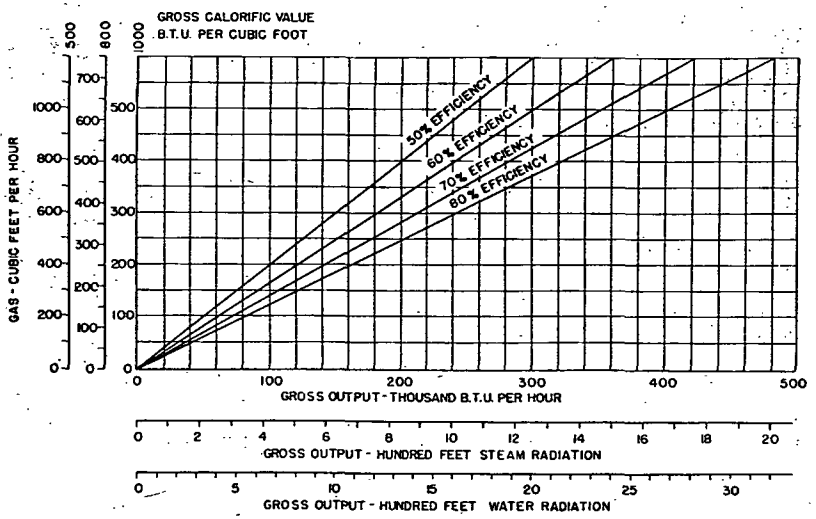


FIG. 6. GAS FUEL BURNING RATE CHART.

introduced for ventilation purposes other than the normal infiltration of outside air. The heat required for warming air brought into the building for ventilation may be estimated from data given in Chapters 3 and 21.

Rate of Fuel Burning

If the estimated maximum load or gross output is determined as outlined in Chapter 13, the fuel burning rates for coal, oil, or gas may be determined from the charts illustrated in Figs. 4, 5 and 6. For a given efficiency, the rate of fuel burning is directly proportional to the gross output, and therefore, these charts can be extended by moving the decimal point the same number of digits in both vertical and horizontal scale. All charts are based upon values of one square foot steam radiation equivalent to 240 Btu per hour and one square foot hot water radiation equivalent to 150 Btu per hour. In using these charts, consideration