TABLE 3. CONVERSION FACTORS FOR DIRECT CAST-IRON RADIATORS[a]

STEAM PRESSURE		TEMP. OF STEAM OR WATER IN DEG. FAHR.	TEMPERATURE OF ROOM					
Vacuum In. Hg.	Lb. Absolute		80 F	75 F	70 F	65 F	60 F	50 F
22.4	3.71	150	0.388	0.424	0.462	0.499	0.538	0.617
20.3	4.75	160	0.462	0.499	0.538	0.577	0.617	0.697
17.8	5.99	170	0.538	0.577	0.617	0.657	0.697	0.782
14.7	7.51	180	0.617	0.657	0.697	0.740	0.782	0.868
10.9	9.33	190	0.697	0.740	0.782	0.825	0.868	0.955
6.5	11.52	200	0.782	0.825	0.868	0.911	0.955	1.045
Lb. Gage								
1	15.7	215	0.911	0.955	1.000	1.045	1.091	1.183
2	16.7	219	0.947	0.991	1.036	1.081	1.128	1.220
3	17.7	222	0.973	1.018	1.063	1.109	1.155	1.249
4	18.7	225	1.000	1.045	1.091	1.137	1.183	1.277
5	19.7	227	1.018	1.063	1.109	1.155	1.202	1.296
6	20.7	230	1.045	1.091	1.137	1.183	1.230	1.325
8	22.7	235	1.091	1.137	1.183	1.230	1.277	1.373
10	24.7	240	1.137	1.183	1.230	1.277	1.325	1.421

[a]These conversion factors multiplied by the heat emitted by a radiator operating at 215 F in a room at 70 F, give the heat emitted by a radiator operating under the indicated conditions.

varies inversely as the height of the coil. It is customary to use an average emission of 100 Btu per linear foot of 1¼-in. pipe, 10 ft high. The heat emission of each pipe of ceiling coils placed horizontally (pipes horizontal) is equal to that of a single row coil. Allowance must be made, however, if the coil is at the ceiling in a higher temperature than that upon which Table 2 is based, namely, 70 F. The common practice is to allow 126 Btu,

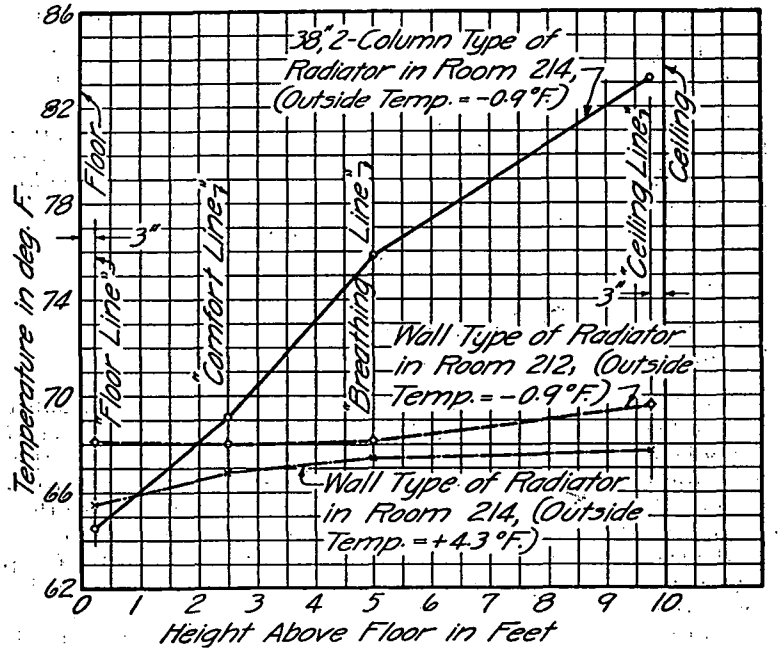

FIG. 1. AIR TEMPERATURE GRADIENTS FROM FLOOR TO CEILING FOR COLUMN AND WALL-TYPE RADIATORS

Note that all three radiators maintained about the same temperature at the *Comfort Level*.

156 Btu and 175 Btu per linear foot of pipe, respectively, for 1-in., 1¼-in. and 1½-in. coils.

Code for Testing Radiators

The A.S.H.V.E. Code for Testing Radiators[1] assumes the following relationship as applicable to the average run of cast-iron radiators:

$$H = K\,(t_s - t_r) \qquad (1)$$

where

H = the rate of heat emission in Btu per hour per square foot of surface.
K = a constant
t_s = the temperature of radiator (assumed to be the temperature of the steam or hot water).
t_r = the temperature of the room in which the radiator is located.

[1]A.S.H.V.E. TRANSACTIONS, Vol. 33, 1927.